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BRITISH TRANSPORT DIRECTORY OF OFFICIALS
A revised list of members of the Ministry of Transport, the British Transport Commission, and its Executives is now obtainable from the Publishers, "The Railway Gazette," 33, Tothill Street, Westminster, S.W.1. Price 1s.

OVERSEAS RAILWAYS 1948

A Railway Gazette publication reviewing the present position and development programmes of twenty-four overseas railways

19 Maps and 94 Photographs

PRICE FIVE SHILLINGS**THE RAILWAY GAZETTE**

33, TOTHILL STREET, WESTMINSTER, S.W.1

Workmen's Fares and Railway Revenues

M R. DAVID JONES, Parliamentary Private Secretary to the Minister of Transport, has put forward a personal suggestion that workmen's tickets may have become outmoded. There is a good deal to be said for his view that at present wages levels much of the old argument in favour of the artisan receiving preferential treatment has been weakened. In these days it by no means follows that because a person travels to work early in the morning he is in receipt of a lower income than one whose journeys take place later in the day. The remuneration of many grades of office workers now compares unfavourably with that of manual workers. During the war a system was introduced whereby certain categories of workers could obtain workers' tickets at whatever hour they travelled, thus removing the only remaining disability, that of early rising, in comparison with the normal fare-paying passenger. The British Transport Commission is looking into workmen's fares, in common with others, in its preparation of new charges schemes. No doubt its search for revenue will be stimulated by the fact that current indications are that operations for 1948 resulted in a deficit of some £8½ million plus whatever net increase in costs has taken place as compared with 1947.

* * * *

Steel Output Record

The output target for the steel industry for 1948, originally put at 14 million tons, was increased in May last to 14½ million tons. Achievement was 14,877,000 tons, which is by far the highest annual output reached in the history of the industry, and more than 2 million tons above that attained in 1947. Output in the best previous year, 1939, was 13,222,000 tons. In December, steel production, which was affected by the usual holidays, was at an annual rate of 14,678,000 tons, compared with 12,646,000 tons a year before. This was the highest rate of production ever achieved in December. The record-breaking progress of the steel industry was the subject of a leading article in *The Times* of January 13. This sounded a warning that the prospective demand for steel was more difficult to estimate than the supply and that the margin of unsatisfied demand was smaller than had been thought. On the other hand, there are reports that, because of unsatisfied demands for steel, productive capacity is to be raised to 18,000,000 tons by 1953.

* * * *

The Economics of Transport

Before members of the Institute of Transport on Monday last, Mr. Roland Bird, Deputy Editor of *The Economist*, delivered a paper called "An Economist Looks at British Transport." In several respects Mr. Bird showed himself in line with ideas which have been advanced in these columns, as will be seen from extracts from his paper, given elsewhere in this issue. He agreed that functional responsibility should not be held by members of the Railway Executive, and that to enable the functional principle to work at its best it ought to be given free rein strictly within its specific technical field. He was on good ground, too, when he defined two distinct functions of management, the first that of general management, and the second that of directorial responsibility. He thought that the function of general management had been given too little emphasis in the Railway Executive and too much emphasis in the Commission. There are many, too, who will agree with Mr. Bird that, although the lack of authority entrusted with the Chief Regional Officers may not have produced any seriously disadvantageous results so far, to a large extent that may be due to the momentum of the railway organisations and to patience and goodwill by the Chief Regional Officers.

* * * *

Sir Cyril Hurcomb on Commission Policy

Sir Cyril Hurcomb, Chairman of the British Transport Commission, paid Mr. Roland Bird the compliment of dealing in some detail with the points raised in the paper when he thanked him for presenting it. The Chairman, as on previous occasions, adhered to his view that it had been right to introduce a substantial functional element into the Executives and to exclude

it from the Commission. Although he declared that the Commission was not specifically interested in day-to-day business, he pointed out that, in the early stages, what might fall within this category might also involve questions of principle in which the Commission could not be disinterested. Because it was not possible to settle policy without knowing in reasonable detail what the policy was about, it was essential to keep in touch with conditions out of which issues of policy arose, and with the men who were seeking to formulate them. One interesting point which Sir Cyril Hurcomb made in support of his claim that the Commission was not unduly enlarging its functions, was the size of the Commission staff. All told, it is 160 persons, of whom nearly 100 are in the financial and statistical department.

* * * *

Overseas Railway Traffics

A substantial improvement had been made in Paraguay Central traffics at the close of the half-year to December 31, when aggregate gross receipts of £2,705,096 compared with £1,647,795 for the corresponding period of the previous year; though declining traffics have continued on the United of Havana with a decrease of £33,072 in the week ended January 1, so that during the 26 weeks to date, receipts have fallen by £2,069,227, to £5,618,696. Leopoldina receipts during the year 1948 amounted to £2,916,317 and were £552,022 below those for 1947; the downward trend has continued in the current year, with traffics in the week ended January 8 falling by £9,911 to £50,284. After further traffics increases in December, both the Nitrate of Chile and La Guaira & Caracas railways showed higher aggregate returns for 1948 than in the previous twelve months, so that La Guaira receipts totalled £1,273,516, against £1,254,425 in 1947, and Nitrate at £318,348, showed an increase of £89,730.

* * * *

National Dock Labour Board

In our issue of January 14 we referred briefly to the recent dispute at Southampton which involved dockers and stevedores who are registered with, and controlled by, the National Dock Labour Board. This Board is a self-supporting institution which is not State controlled. It consists of a Chairman, Vice-Chairman, and eight members, four representing employers and four dock workers, who are nominated by a National Joint Council for the Port Transport Industry. The duty of the Board is to implement the terms of the Dock Workers (Regulation of Employment) Scheme of 1947, under which dock workers ceased to be casual labour. There are local boards in all the major ports; the Chairman of the Southampton Board is Mr. R. P. Biddle, Docks & Marine Manager, Southern Region, British Railways. The Board is not concerned in any way with industrial agreements as such; it has merely to carry out the terms of the decasualisation scheme, and the cost of operating is defrayed by a levy or percentage payment from the employers.

* * * *

Campaign to Stagger Holidays

From official and press reports it is evident that the campaign for a wider spread-over of the holiday season has not made much headway against the established habits of the public. The last summer has, indeed, provided an even more striking illustration than usual of empty resorts in June and early July and a rush to the seaside immediately before and after the August Bank Holiday. Because popular opposition to the movement seems to be intractable under present conditions the Catering Wages Commission in its fifth annual report* advises concentration on the removal of two of the chief obstacles to its success. These are the dates of school examinations and the date of August Bank Holiday itself. The report points out that a recent recommendation by the Secondary Schools Examination Council most likely will result in examinations starting in May. This should greatly help the spreading of holidays if it leads to the summer term ending earlier. It is also reported that the Standing Committee on the Staggering

of Holidays in England & Wales is studying in conjunction with the British Tourist & Holidays Board the possible effect of a change in the dates of the Whitsun and August holidays.

* * * *

Development of an American Railway Trade Union

After a train disaster on the Erie Railroad in 1873, a group of eleven men met at Port Jervis, New York, to prepare a fraternal insurance plan for the relief of enginemen's families. In the arrangements made at this meeting, lay the origins of the Brotherhood of Locomotive Firemen, and so great has been the subsequent development of the organisation, that at the time of the recent seventy-fifth anniversary, the number of lodges in the brotherhood had increased to almost 1,000. By the time the first convention was held in 1874, twelve lodges had been organised, and, although early endeavours were concerned principally with insurance affairs, protective measures were considered in the second year and a first wage agreement was reported at the third convention. Despite difficulties, progress continued, and at the twenty-third convention it was decided that, because many members had retained their affiliation since becoming engineers, the name of the organisation should be changed to the Brotherhood of Locomotive Firemen & Enginemen. The present procedure relating to wages, rules, and working conditions was established under the Railway Labour Act of 1926, though in 1934 amendments were made concerning rights of representation and collective bargaining.

* * * *

Institute of Transport: Council's Annual Report

In the course of the report of the council of the Institute of Transport on the work of the Institute for the year ended September 30, 1948, it is reported that the new headquarters premises were officially opened by the President on April 30, after the main work of adaptation had been completed. The transfer of the offices and library took place during December, and the premises have been occupied since January 1, 1948. A steady flow of contributions to the Premises & Development Fund was received during the year, and at September 30 it had reached two-thirds of the way to the target of £100,000: the council appeals to members to assist in raising the remaining sum. No change took place during the year in the detailed administration of the Institute's affairs, which remained in the hands of the standing committees of the council; and the council records its appreciation of the work of the committees and of their chairmen. The council also offers its warm thanks to the transport press for the help received from it during the year; officers and members of the council again had the opportunity of meeting the editors or the representatives of some twenty of the leading publications directly interested in the transport industry, and of exchanging views and ideas with them.

* * * *

Substitutes for Timber

In recent years the difficulty of securing supplies of timber has led to experiments with substitute materials. On the railways there have been many instances of this sort, ranging from the introduction of railway sleepers, both in steel and re-inforced concrete, to small items of railway carriage fittings now made in steel where formerly timber was used. The Timber Development Association naturally is concerned with the manner in which, in many industries, its products are being substituted, and it has sent a memorandum to the President of the Board of Trade. In this it points out that the restrictions on the imported use of timber at present are due to a stringency in foreign exchange, and not to any shortage of world supplies. It offers a number of suggestions to ease currency difficulties, and to this end the relationship between timber, steel, concrete, coal, and aluminium are examined. It is pointed out that substitutes for timber usually are uneconomical, and that experience has shown the main disadvantages of the manufactured substitute to be an increase in production costs, the diversion of manufacturing capacity from export to domestic consumption, and a direct increase of dollar expenditure on substitute materials.

The Occupation Crossing Problem

Lt.-Colonel E. Woodhouse, in his report on the accidents which occurred on March 1 and October 16, 1948, at Conington North Occupation Crossing, summarised in this issue, deals at length with a problem which is one of the most difficult with which railway and other authorities are faced. The real point at issue, as he emphasises, is the increase in the risk to both road and rail traffic at crossings such as this where the conditions have altered materially in the course of time. The risk to rail traffic has, of course, become much more serious than it was years ago, for a collision between a fast train and a heavy lorry can lead easily to a bad derailment, such as that at Hilgay in 1939. The problem presents legal, economic, and technical difficulties, and can be solved completely only by abolishing every crossing, a remote ideal. The provision of some warning device seems a reasonable thing to ask for, but apart from legal issues there are certain practical difficulties involved not immediately apparent. To meet them all substantially 100 per cent., as has been attempted in the Netherlands, involves a good deal of equipment, and to protect only the more important locations in that way would entail a large expenditure. The British Transport Commission is, however, considering the whole question afresh.

* * * *

Nyasaland Railways

THE report for the year ended December 31, 1947, of the Nyasaland Railways Limited, of which Mr. W. M. Codrington is Chairman, shows gross receipts for the railway and its subsidiary, the Central Africa Railway Co. Ltd., at £450,115. Working expenses were £282,516, leaving a balance of £167,599, which, when adjustments for tax and interest charges were made, left a final balance of £9,734. Of this, £863 was applicable to Nyasaland Railways Limited. Tonnage carried was 156,784, compared with 139,432 in 1946, and passengers totalled 350,130, as against 278,404 in 1946. Some results appear below:—

	1946	1947
Passengers	278,404	350,130
Goods traffic (tons)	139,432	156,784
	£	£
Gross receipts	380,768	450,115
Working expenses	226,590	282,516
Balance	6,987	9,734

Prices of all replacements have risen so much that a renewals fund based on original cost would not now meet more than a fraction of the cost of replacing equipment. Therefore, unless far more generous allocation for renewals is made in future, there will be ultimately no resources available to replace plant and equipment.

Since 1939 the volume of traffic, measured in net ton-miles, has approximately doubled. The good pre-war maintenance of stock has made it possible up to now to give good service, but shortages have now made themselves felt. Every effort is being made to keep the maximum amount of rolling stock in traffic, but until the new locomotives on order are received, it will be difficult to handle the traffic offering. Fifty new wagons have arrived and 50 more are on order.

A wagon ferry was constructed in 52 days to convey traffic across the Shire River at Chiremo, after most of the bridge had been swept away by floating matter brought down by the river in flood. The gap was too great to be filled by a temporary span which had been sent out previously to meet such a contingency. Work is in hand on a new bridge, which it is hoped to open in 1950.

A new ship for Lake Nyasa and a floating dock are being built. Monkey Bay has been selected as the headquarters of the lake service and provision of necessary facilities has begun. Other schemes in hand include the extension of Limbe workshops and the construction of maize storage and grinding equipment.

It is stated that prospects in the colony are encouraging. A large development project for the Vipya plateau has been announced and a credit of £2,000,000 has been granted for the construction of roads, the improvement of social services, and other purposes. The company welcomes the expansion of the colony, which it has urged for years, and will play its full part in the improvements.

Swiss Railway Publicity

THE Swiss Federal Railways spare no effort to extend and improve relations with the public. As a State railway system, they are, in fact, under an obligation to furnish detailed accounts of their activities. Financial reports, and statistical returns are published regularly, and the national press is available, to a greater extent than in almost any other country, as a medium of publicity for such widely varying subjects as timetable alterations, schemes for new works, and alterations in rates and fares. It is realised, however, that information couched in stilted official jargon, columns of statistics, and even far less technical press reports, will reach only a comparatively small section of the travelling public, and there remains a need for easily comprehensible and accessible information about the national railway system.

To make good this deficiency, the press service of the Swiss Federal Railways recently issued a small brochure entitled "The Swiss Federal Railways Today," which is reviewed elsewhere in this issue. It is attractively produced, and is profusely illustrated with an excellent series of photographs and drawings. The contents are divided into eleven sections, and cover a wide range of subjects. They constitute a popular general review of the activities and achievements of the Federal Railways, and their responsibilities towards the people of Switzerland. Separate editions of the brochure in English, French, German, and Italian have been prepared, and if the present issue proves popular, further editions, embodying the latest available statistics, are contemplated.

Although the population of the country is only about 4,000,000 the number of passengers carried by the Swiss Federal Railways during 1947 was 213,000,000, a figure equal to about half the population of Europe. Such is the influx of tourists during the summer, and for the winter sports, that the number of foreign visitors included in this total must be very considerable, but it is obvious that railway travel plays an important part in the life of the average Swiss. Moreover, the Federal Railways are the greatest industrial enterprise, and the largest employer of labour, in the country.

The need for adequate publicity for such an important item in the national economy is at once apparent. In presenting its new brochure, the press service of the Swiss Federal Railways has set an example that might well be followed in other countries. Subsequent editions of this judicious blend of text and illustrations will be awaited with interest, and should prove equally informative.

* * * *

Developments in Railway Operating Practice*

BY 1939, we had grown used to speeds of 100 m.p.h. in the running of the "Coronation" express between London and Edinburgh. This is so far removed from the usual conception of rail travel as to make of interest the developments that have rendered such speeds a practical proposition. The prestige derived from the punctual running of such a train is tremendous, but its value can be nullified if delays are experienced by other trains due to the necessity of giving the "flyer" a clear road.

Between London and Edinburgh, the section of line carrying the heaviest traffic is the 44-mile stretch from York to Darlington. About 15 years ago, this was converted from semaphore signalling to three-aspect colour-light signals. At that time, the maximum speed was about 75 m.p.h., and the new signals were spaced 1,300 yd. apart, and trains could follow at intervals of about 2½ min. When high-speed trains were introduced, the signalling was changed to display four aspects, and it is now safe for trains to run up to 100 m.p.h. The fourth aspect does not restrict the working of slower trains; it merely gives the driver a precise indication of the state of the line ahead.

A clear road can be assured only by good regulation of the traffic, and by keeping all classes of train running to the best advantage. By the systematic reporting of all train movements to one central office, the traffic officers there have up-to-the-minute information of the all-line position. They

* Based on a paper read before the Royal Dublin Society, on January 6, 1949, by Mr. O. S. Nock

are able to take the broader view, and advise the signalman what course to take.

At the same time, modern engineering is tending to make the signalmen at key points more akin to traffic controllers. The first step was to operate the semaphore signals and points by electric or compressed-air motors. Then came the track circuit, displaying to the signalman, on an illuminated diagram, the whereabouts of every train in his area; and in 1929, all locking was made electrical. The next step was to eliminate the traditional form of lever, and to use small thumb switches to set up and signal an entire route.

Remote control has been used on long stretches of single line in the Western States of America, where traffic is sparse, and passing loops are many miles apart. So that trains shall spend the minimum of time waiting to cross opposing traffic, as much as 150 miles of track, operated from one central panel, have been brought under the control of one train despatcher. If all the signals and points were controlled over direct wires, as in the intensively-used British installations, the cost of wiring would be prohibitive. Instead, the control is coded, and the operation can be likened to dialling on an automatic telephone. Only two line wires are used, and if the despatcher wishes to operate a signal at a remote station, he turns the appropriate switch on the panel, and this action "dials the number." The normal time from turning the switch to receiving the indication that the distant function has been performed is about 4½ seconds.

This Centralised Traffic Control has enabled some of the American diesel-electric trains to make spectacular running over single-line sections. The line is track-circuited throughout; there is no need for single-line tokens; and the loops can be negotiated at top speed. There is a remarkable record of the "Denver Zephyr" over a 90-mile stretch of the Chicago, Burlington & Quincy Railroad, which is controlled by one C.T.C. panel. Over certain sections of this single-track route, this streamline diesel-powered train was running at over 80 m.p.h., and the average throughout the journey was considerably over 60 m.p.h.

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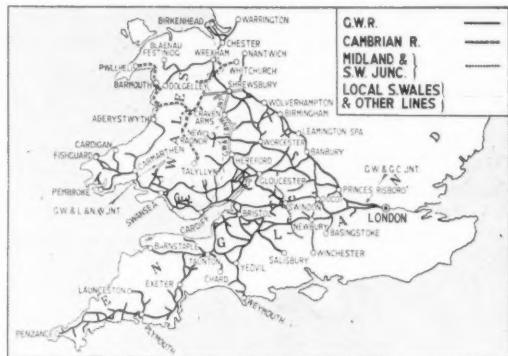
Inter-Regional Transfers

THE Railway Executive's official announcement, on November 30 last, of inter-regional transfers and adjustments already decided on, has naturally led to speculation and many rumours as to changes yet to come, particularly in the case of main lines which penetrate from their own Regions into the area of others. No straightforward scheme can possibly avoid a certain amount of overlapping, and it will have been noticed that when the "frontier" between England and the Scottish Region was fixed at Gretna in June last, putting Carlisle Station and the Silloth branch in London Midland territory, Kingmoor shed had to be specially treated as an outpost in England of the Scottish area, and the "North British" Waverley route to Carlisle split at Harker—two instances of artificial difficulties which could have been avoided by an adoption of Carlisle No. 3 box ("Port Carlisle Branch Junction" in old R.C.H. terminology) as the point of division, leaving the "North British" Silloth line in the Scottish Region.

From evidence already available, it would appear that the old Great Western main line from Paddington to Saltney Junction, Chester, is to be treated as the Eastern boundary of a greatly enlarged Western Region, and that the "London & South Western" main line from Salisbury to Exeter will be its Southern frontier. Consequently, we may expect to see the "Great Western" route to Weymouth cut at Yeovil Pen Mill, with the Southern Region taking the Bridport, Abbotsbury, and Portland lines and working from Yeovil Junction into Yeovil Town, and the Western still running from Durston through Yeovil Town to Pen Mill and, possibly, between Chard and Chard Junction. West of Exeter it appears to be admitted that all "Southern" lines from Cowley Bridge—North Devon, North Cornwall, and the old L.S.W.R. main line to Plymouth—will come under Western Region rule. This is a simple transfer, though new connections would be necessary at Cowley Bridge and in the Plymouth area if the Okehampton line were to be considered as an alternative route from Paddington to Cornwall (avoiding Exeter), and con-

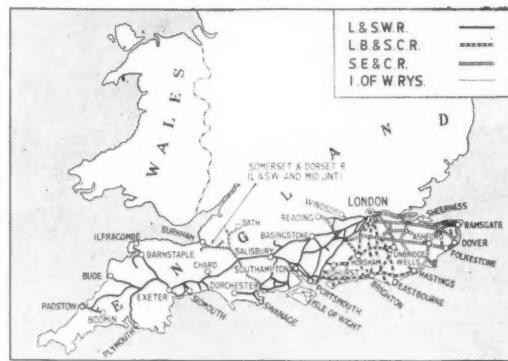
siderable alterations would be needed, west of St. Davids, to permit of trains from Salisbury running direct to Torquay, which would be a great convenience in summer. Territorial transfers of this nature do not, however, necessarily involve any re-routing of passenger traffic, and the North Cornwall and most of the North Devon business could still be dealt with at Waterloo.

The chief interloper on Western Region ground would be the old Midland main line from Birmingham to Bristol, for the transfer of which there would be strong arguments. Bristol (T.M.), Churchdown, and Worcester (Shrub Hill) joint



Great Western Railway group

stations have already been allocated to the Western, and the concentration in one Region's hands of all the traffic between Birmingham and Bristol and the West, and between Birmingham and Bournemouth, as well as the control of lines round Gloucester, would be a distinct advantage, even if the change were unpopular on sentimental grounds. Assuming the "split" to be made at King's Norton or Barnt Green (leaving in London Midland hands New Street Station and such suburban traffic as is still faithful to rail in the Birmingham area), and Paddington in control of the Somerset & Dorset from Bath to Templecombe, very few obstacles would have to be surmounted, as the old "East and West" from Broom to Blisworth (the fate of which as a passenger line appears to be



Southern Railway group

in the balance) could be divided at Stratford, Byfield, or Greens Norton (where the Banbury—Towcester branch comes in from Cockley Brake) to avoid Western penetration into a London Midland area.

The probable fate of the old Great Central main line is less simple. Rumour foretells its transfer to the London-Midland Region, a startling re-echo of *The Railway Gazette's* own alternative scheme for the 1923 grouping, which would have given it to the Midland of those days. The obvious scheme would now appear to be the handing-over to the London Midland of the main line from Manchester (London Road) to Banbury Junction and to Aylesbury, London Transport carrying on from Aylesbury to Harrow, and the Western

Region taking the short piece of Great Central construction from Grendon Underwood to Ashendon, Northolt East to Marylebone, and Harrow to Neasden South, and assuming entire control of the joint line through High Wycombe. Marylebone would become an additional London terminus for the Western Region, available if necessary for accommodating some Birmingham and north traffic as well as all the suburban service to the joint line, and the Western would take over at Harrow whatever London trains the London-Midland might route over the Great Central line.

Such a scheme has great advantages. All routes between London and Manchester would be in London Midland hands (subject, of course, to the control of other Regions between Marylebone and Aylesbury or Grendon Underwood), and, if we can ignore such passenger business as still passes from Kings Cross to Nottingham via Grantham and to Sheffield via Retford, traffic between London and Nottingham, Leicester, and Sheffield, which has suffered considerably in recent years from being at the mercy of two groups, would be in one Region's hands. Both routes from the Midlands to the West of England and to Bournemouth, where traffic in summer is very heavy, would commence under London Midland control, which is exceptionally important now that engineering troubles at Arley tunnel seem to have put the Leicester-Birmingham route out of action for some time to come.

In a transfer of this magnitude, difficulties are bound to occur in the allocation of branch lines whose affinities are mainly with the Eastern Region but which traverse London Midland ground, and vice versa. All branches north of Penistone would no doubt pass to the London Midland, whose complete hold on Manchester would ease many operating troubles and simplify organisation. The chief problems would probably arise in the Sheffield and Nottingham areas, and space only permits of brief reference to them here.

At Barnsley, the London Midland would probably be in

complete possession, taking the Great Central Penistone—Doncaster line as far as Mexboro' and its Barnsley—Sheffield route to Tinsley, as well as the Nostell line to its junctions at Winterset with the West Riding and Grimsby. Coming south, Eastern Region territory would commence at Woodhouse Junction and extend to Lincoln and Cleethorpes, and from Bagthorpe Junction (New Basford) the old Great Northern route to Derby (Friargate) and the Pinxton branch would pass to London Midland hands. Nottingham suburban lines, over which passenger traffic has almost vanished, and the line from Weekday Cross (south of Victoria Station) to Grantham and Newark would remain part of the Eastern Region.

At Mansfield, the Lancashire, Derbyshire & East Coast, and the old Midland line from Nottingham to Lincoln, would inevitably cause some overlapping. Mansfield (Eastern and Midland Stations) might well be treated as the dividing point between the Regions, leaving the L.D. & E.C. line from Chesterfield (Market Place) and from Beighton Junction in Eastern territory, to which it properly belongs, transferring to the Eastern Region the Midland's Mansfield—Shirebrook—Shireoaks Junction line (the London Midland retaining Staveley to Elmton and Creswell and taking the Sheffield district line), and leaving in Eastern hands the old Great Northern branch to Shirebrook and Langwith, though it traverses a short piece of Great Central ground between Annesley and Kirkby Junction. Alternatively, it might be thought better to make Ollerton the dividing point on the old L.D. & E.C. line, putting in London Midland hands the line from Chesterfield (Market Place) and Beighton, as well as the old Great Northern Leen Valley line from Langwith to Bulwell and Leen Valley Junction. Shireoaks Junction would then remain the limit of London Midland territory on the Mansfield-Worksop route. The Midland's Nottingham—Newark—Lincoln section, though really in Eastern territory for its whole length and



L.M.S.R. group



L.N.E.R. group

impudently crossing the East Coast route on the level, has so much affinity with the London Midland that there would appear to be a case for leaving it where it is, unless a split at Newark were considered desirable. Several lines in the Nottingham and Mansfield areas, from which the passenger service has long been withdrawn, are not mentioned in this brief survey of possibilities.

* * * *

American Railroading, 1929 to 1947

IN October the Association of American Railroads published a bulletin which tells the story of railway development during the last 18 years. There is no text—just 14 statistical tables, but these say all that need be said about the work done by the 125 Class 1 railways in the United States. Each of these railways earns an annual operating revenue above \$1,000,000. Collectively they own some 228,000 miles of road, about 95 per cent. of all the route-mileage in the States, and more than 11 times British Railways' mileage. In 1947 they handled a record peacetime freight traffic, estimated to equal two-thirds of the tonnage moved by all types of internal transport. Yet in some ways the American railway position is not so securely established as it was 20 years ago. With the aid of the A.A.R. bulletin, we can see the changes which have come about.

Since 1929, miles of road operated in freight service have decreased by 13,700, or 5 per cent. Passenger services are run on only 161,000 miles of road, 71 per cent. of the total length. During the last eight years, passenger trains have ceased to run on nearly 11,000 miles of line. In Great Britain there has been nothing like that shrinking of mileage or withdrawal of facilities. About 400 miles of road, or 2 per cent. of the total, have gone out of use here since 1929. An equal length, out of 8,000 miles of road, has been abandoned by a single American railway in the course of reorganising its property; we refer to the Chicago & North Western, which recently celebrated its centenary.

The preponderance of freight movement on American railways is growing. In 1929 freight revenue constituted 77 per cent. of total operating revenue and passenger takings 13 per cent. For 1947 the corresponding proportions were 81 per cent. and 11 per cent. Between these years freight train-miles exceeded passenger train-miles, save in the trade slump of 1931 and 1932. In 1947 practically three freight train-miles were worked for every two passenger train-miles. Before the war British passenger train-mileage was more than double the freight train-mileage and in 1947, despite attenuated timetables, was 63 per cent. of the total.

On a general average, the U.S.A. railways ran seven passenger trains daily over each mile of road in 1947, a fourth of the number run on British railways. The average American train consists of nine vehicles, two more than in 1929. The standard ordinary coach still has 76 seats, but the capacity of parlour cars has been reduced from 39 to 33 seats and modern sleeping cars carry 16 passengers, instead of the 26 accommodated in the old type of "sleeper."

Coach mileage is pretty evenly divided between ordinary coaches and special vehicles, such as parlour, sleeping, lounge, dining, and observation cars. Over individual railways, the ordinary coach passenger travelled 84 miles in 1947, while the parlour or sleeping car passenger booked for a 400-mile journey. Some of the long-distance expresses weigh 1,000 tons and the deadweight hauled per passenger has been increased greatly in rolling stock ordered since the war. There is little or no profit accruing to the railways from passenger travel. The Interstate Commerce Commissioner calculates that in 1947 they lost \$25,000,000 on dining cars alone.

Statistics of freight train performance are a more cheerful subject to study. Measured by 1947 net ton-miles, the U.S.A. railways provided 30 times the amount of freight rail transport in Great Britain. That movement was 41 per cent. above 1929 and could not have been effected without improved operating methods.

The remarkable record indicated in the accompanying table was achieved with 73 per cent. of the locomotives and 76 per cent. of the wagons available in 1929. To be sure, the average tractive effort of a locomotive was 21 per cent. higher and the average capacity of a wagon was 11 per cent. greater at

51·4 tons. But it was good railroading to carry more traffic in 1947 with 44,503,000 wagons than in 1929 with 52,828,000. What glorious hours for the freight rolling stock controllers!

U.S.A. OPERATING RESULTS

	1929	1947	Improvement per cent.
Revenue ton-miles (millions) ...	447,322	654,691	46
Net ton miles per mile of road per day	5,627	8,451	50
Wagon load (tons) ...	26·7	32·6	21
Train load (tons) ...	804	1,146	42
Freight train speed (m.p.h.) ...	13·2	16	21
Freight locomotive miles per locomotive day ...	91·2	120	31
Net ton miles per freight train hour	10,580	18,126	71
Gross ton miles per freight train hour (excluding locos.) ...	24,539	38,462	56
Gross ton miles per ton of locomotive fuel (including locos.) ...	16,007	17,505	9

There was one flaw in the proceedings. The number of wagons conveying "smalls" fell from 13,206,000 in 1929 to 6,073,000—a drop of 54 per cent. This freed wagons for heavy traffic, but points to a diversion of this class of business to other carriers. The leakage is again manifest in 1948 and the time may be approaching when the ordinary freight train will haul only full wagon loads, leaving "smalls" to be dealt with along with parcels traffic, termed in America "express."

A similar problem about goods "smalls" and parcels is likely to arise on British Railways. In general, the privately owned U.S.A. railways are faced with much the same difficulties as confront our State-owned system, but show more resource in surmounting them. By reorganising work and using labour-saving devices, they kept the number of employees in 1947 below the 1929 strength by 18 per cent. Despite the scarcity of steel and timber, they laid last year 1,464,000 tons of new rails and 37,920,000 creosoted sleepers, roughly 8 times the tonnage of rails and 12 times the number of sleepers used in Great Britain.

One last figure—the amount of fuel consumed by all types of motive power was equivalent to 132,730,000 long tons of coal, or about two-thirds of our National Coal Board's output. A prodigious consumption, but then the U.S.A. railways carried some 485,000,000 long tons of coal and coke in 1947. Theirs is a great country !

The German Railways and International Services

THE resumption in the Spring of 1946 of international commercial freight and passenger traffic into, out of, and in transit through Germany necessitated machinery for the settlement of accounts in respect of through bookings over the German Railways, as the Reichsmark was not negotiable. The situation was complicated by the desperate need of all four Occupied Zones for dollars and other "hard" currencies with which to buy necessities from abroad. At this time that part of the former Reichsbahn which lay in each Zone was under the control of the Occupying Power concerned, and general policy was determined by the Quadrupartite Transport Directorate, to which were subordinate the Quadrupartite Railway Committee and, in turn, the Quadrupartite Railway Tariff Sub-Committee. All these bodies met regularly in Berlin until April, 1948, under the chairmanship of an officer appointed in turn by each of the Allied Powers. The four Powers were bound by the Potsdam Agreement to maintain uniformity in railway rates and fares, and this was adhered to until the cessation of Quadrupartite meetings.

Late in 1945, after considerable uncertainty as to whom to ask, the Swedish, Norwegian, and Danish State Railways made urgent representations to the Railways Directorate of the then British Zone, to re-inaugurate commercial freight traffic in transit through Germany, and early in 1946, with the concurrence of the American and French Zonal authorities, traffic began to pass between Denmark and Switzerland via the frontier stations of Padborg and Flensburg. Freight charges were held in suspense accounts pending a decision as to the machinery of settlement.

In March, 1946, it was agreed between the railway administrations concerned to re-inaugurate the Nord Express between France and Belgium (with connections with Great Britain) on

the one hand, and Scandinavia on the other, to synchronise with the introduction in May of the summer services. No Quadripartite decision having been reached regarding a dollar tariff, the Directorate of Railways in the then British Zone, to render possible through booking of passengers and baggage, proposed a temporary tariff in which the German proportions were expressed in sterling, with fares calculated in pence per kilometre so as to approximate in pence per mile to the current British railway passenger fares. It was found, by using the Swiss franc as a yardstick, that these fares were almost the mean of those in force at the time on other European systems. The proportions accruing to the German Railways in respect of bookings effected outside Germany were to be credited to the Allied Control Authority in dollars. This sterling tariff was put into force for the duration of the 1946 summer passenger services, lasting until October of that year.

The Nord Express may be regarded as the first post-war commercial service, for the Orient Express, begun at the same time between Paris and Prague and Vienna, via Strasbourg, Karlsruhe, and Stuttgart, with the encouragement of the French authorities, was at first little more than an official "V.I.P." train for the use of Allied official personnel. New services followed quickly, such as the Scandinavian Express between the Hook of Holland and Copenhagen (connecting with the Harwich-Hook of Holland night packet service), the Hook of Holland-Basle express, the Ostend-Prague branch of the Orient Express, and (a basic departure from precedent) the new Scandinavia-Swiss Express giving a through service between Stockholm and Copenhagen and Switzerland via Hamburg and Frankfort, avoiding Berlin.

The Russian Zonal authorities at first seemed willing to participate in international passenger services. From the resumption of the Nord Express, a branch ran to and from Berlin until the summer of 1948, and in 1947 arrangements were nearly complete for its extension from Berlin to Warsaw, via Frankfurt-on-Oder, but the proposal was dropped at the request of the Russian railway control officers. A weekly sleeping car service, worked with a Swedish State Railways' car, is in operation between Stockholm and Berlin, via Trelleborg and Warnemünde (pending the rehabilitation of the approach to Sassnitz), and, until the recent embargo, traffic passed regularly between Sweden and Switzerland via this train-ferry and the Russian and American Zones.

In September, 1946, Quadripartite approval was given to the introduction of dollar passenger tariffs. Both transit and *nachbar* (or bilateral) tariffs were brought into operation for the various traffic relations as new services were inaugurated, beginning with the winter services in October. The basis of this dollar tariff was the German domestic passenger fare schedule as in March, 1946 (that is, before the 100 per cent. increase of April 1, 1946) converted from Reichsmarks into dollars at the rate of thirty cents to one mark. This was found to give fares which approximated (as did the temporary sterling fares) to the mean of fares in other European countries. It is noteworthy that the conversion rate of thirty cents, which was arrived at after study of German commodity prices and of other factors, is the rate, determined by the Allied and German financial authorities after completely independent calculation, of the Deutsche Mark which replaced the Reichsmark in June, 1948. The majority of European international passenger tariffs are now expressed in Swiss francs throughout, but these are converted to dollars for purposes of German settlement of accounts. Concomitantly with the introduction of dollar passenger tariffs, interim agreements were concluded between the several Occupying Powers and Cie. Internationale des Wagons-Lits governing the sale of sleeping berths and meals in Wagons-Lits cars running over the German Railways.

Freight traffic into and out of Germany through land frontiers has grown steadily since 1946. The principal traffic consisted at first of coal consigned as reparations to France, Belgium, and Luxembourg, but with the revival of commerce and industry in Germany and elsewhere in Europe, the variety of consignments is now great. International commercial freight traffic had been passing for several months before Quadripartite agreement was obtained in September, 1946, to introduce dollar tariffs for transit traffic, to apply retrospectively. These tariffs are the inland Reichsbahn freight tariffs of 1939 (but unaffected by the increase of August, 1948)

converted, as in the case of passenger traffic, into dollars at the rate of thirty cents to one mark. They are applied to purely transit traffic, and to traffic in transit to and from German seaports. The machinery for settlement is, in essence, that the consignee arranges to credit the Allied Control Authority with the German railways' proportion in dollars.

Dollar tariffs do not apply to non-transit traffic, and, as a result of the non-convertibility of the former Reichsmark and present Deutsche Mark, consignments are "to pay" in either direction from the German frontier to destination. Traffic is conveyed at normal inland freight rates, which were increased by 40 per cent. in August, 1948. A valuable transit traffic developed between Czechoslovakia and Poland on the one hand, and France, Belgium, and Holland on the other, and in transit through Germany to and from German seaports, as the Russian authorities were again willing and anxious for traffic to pass through their Zone. The main problem has been the involved question of wagon-interchange, based on the fundamental difficulty of determining equitably, in the light of Germany's depredations of occupied countries, what in fact was her wagon fleet. This question, after innumerable meetings and exchanges, has been settled under the aegis of the U.N.O., and wagon interchange is now governed basically by the R.I.V.

In spite of the financial complexities arising out of customs and handling charges, of the division between the several Zones of dollar credits in respect of rail traffic, of currency reform in the summer of 1948, and of the non-co-operation since April, 1948, of the Russian authorities, the dollar tariffs have served a useful purpose during a period of transition.

Subject to the final approbation of the Allied Governors, matters of railway policy are now decided by the German ministers concerned in the Western Zones. Some German personnel formed part of the Anglo-American Zonal delegation to the International Timetable Conference at Krakow in October, 1948, the first German delegation to an international railway conference since the war.

Southern Region's Staff Conferences

THE Southern Region's Informal Staff Conferences inaugurated a year ago have already proved their worth. At the second Salisbury conference, held on Tuesday, Mr. John Elliot, Chief Regional Officer, who presided, was accompanied by Mr. W. P. Allen, Member of the Railway Executive, who took a prominent part in the proceedings. Some 200 representatives of all grades in the Central Division attended, and officers from all departments were present to answer questions that might arise. They included Mr. S. W. Smart, Superintendent of Operation; Mr. T. E. Chimes, Motive Power Superintendent; Mr. F. E. Campion, Assistant Civil Engineer; Mr. W. H. F. Mepsted, Assistant Commercial Superintendent; Mr. H. C. Lang, Assistant Chief Officer for Labour & Establishment; Mr. E. A. W. Turbett, Assistant Chief Mechanical Engineer; Mr. C. Grasmann, Public Relations Officer; Dr. L. J. Haydon, Chief Medical Officer; Mr. R. Restall, Central Divisional Engineer; Mr. C. F. de Pury, London West Divisional Superintendent; and several others. The conference which opened at eleven was followed by a luncheon and continued in the afternoon. These conferences are not intended to encroach at all on the conciliation organisation or to air personal grievances, though the latter are not entirely ruled out.

A wide range of subjects was covered, nearly all showing a keenness by the Southern Region staff to make their railway still more efficient. Here are some of the subjects raised and answered either by the Chief Regional Officer or the departmental officer directly concerned:—Track layout at Basingstoke; Salisbury redundant enginemen; housing; track layout at Bournemouth; allocation of third class accommodation on Isle of Wight steamers; train connections at Havant; empty wagon disposal; taxi speeds in Southampton Docks; lighting at Bournemouth goods station; the extra cheese allowance for plate-layers; cheap tickets. Altogether it was a day well spent. Mr. Allen took the opportunity of rubbing in a few home truths—they must not expect too much too quickly from the new regime; there were too many unofficial strikes; coal was costing £33 millions a year; there were too many thefts, in London alone they came to £1,000 a day; 4 dishonest men in 100 brought discredit on the honest 96.

LETTERS TO THE EDITOR

(The Editor is not responsible for the opinions of correspondents)

Edinburgh-Aberdeen Timings

Sir James Burnett of Leys, Bart.,
Crathes Castle,
Aberdeen. January 10

TO THE EDITOR OF THE RAILWAY GAZETTE
SIR.—The standard express timings suggested in "Shorter Trains and More of Them," in your issue of December 3, 1948, for the Edinburgh—Aberdeen route are disappointingly slow. While fully alive to the difficulties of this section, infested as it is with service slacks, we also know what was done before the war.

After thinking that bad coal and poor maintenance were a temporary aftermath of war, it is depressing to gather that the article in question apparently does not suggest restoration of 1938 speeds. Even in 1936 there were four down trains better than 3 hr. 20 min., while one took only 3 hr. 23 min. with nine stops. In 1938, the down "Flying Scotsman" (usual load nine bogies) was allowed 3 hr. (in 1936 it was 3 hr. 3 min.), and in the reverse direction, when it was heavier, with more stops, 8 min. extra. In August, 1936, *Sir Visto* 4-6-2 ran from Edinburgh to Dundee with the "Flying Scotsman" (load nine bogies) in 80 min. 55 sec., including the two stops, whence the train was taken on by another Pacific arriving in Aberdeen a minute under the 3 hr. after a severe check at Dunnottar Box.

This was by no means an unusual achievement. Why, therefore, is it considered an improvement that we should spend 20 min. longer on this journey with the proposed light trains stopping the same number of times?

Those responsible are to be congratulated on the restaurant cars on this service, which are good; in winter, they are usually the only vehicles which are not stone cold. Presumably, they are independent of the heating from the engine.

J. G. BURNETT OF LEYS

"Is the Railway Executive Really Necessary?"

Cambridge. January 6

TO THE EDITOR OF THE RAILWAY GAZETTE
SIR.—The policy of the present Government in establishing State monopolies for the major industries has created an entirely new set of problems in management. Each nationalisation Bill has revealed the same depressing features of the Whitehall mentality. In each case we have the same type of centralised machine—admirably designed to prevent people from doing anything useful, but utterly unsuited to the successful running of a commercial undertaking, in each case we have the same tortuous channels of responsibility converging on the Minister in London, in each case the same inertia. A change of Government may yet halt the process of establishing the Civil Service State, but at least two vital industries—coal and transport—will remain as nationalised concerns. The urgent and pressing problem, therefore, is to find a way of running such a concern without incurring the loss of efficiency and increase of cost which seem to follow inevitably with the orthodox type of centralised organisation.

The case of the coal industry has been discussed with great authority by Sir Charles Reid in a series of three articles which appeared recently in *The Times*. The solution which he proposes would confine the functions of the Coal Board to directing the national policy of the industry and to running a research service. The management of the industry would be in the hands of 26 distinct regional corporations operating in the manner of the best type of private enterprise and producing their own balance sheets. Under this scheme the Coal Board would be in the position of a holding company controlling 26 distinct and definite businesses. The organisation in London would be cut down to the minimum necessary for this purpose.

Is it unreasonable to suggest that a somewhat similar solution might be applied to transport? The Transport Commission would become a holding company equivalent to the proposed re-formed Coal Board. Under the Commission there would be six railway corporations corresponding to the existing Regions and each operating as a separate company. Road transport should be in the hands of six corporations covering the same Regional areas as the railway corporations. The present Railway Executive and Road Transport Executive would be eliminated completely. Each corporation would have a general manager who would be responsible only to the Commission. The chief officers in each corporation would carry full responsibility under the general manager. There should be no special functional duties for individual members of the Commission.

It may be argued that under such a scheme the advantages of standardisation would be lost. But are there any advantages in carrying standardisation beyond a certain point? As you aptly expressed it in your editorial article on State Transport's First Year in your December 31, 1948, issue, long before everything is standardised the standards will be out of date. The Railway Executive has just announced its intention of constructing locomotives to new standard designs. What could be more foolish? There is already a high degree of standardisation on the Western and London Midland Regions, and to a lesser extent on the other Regions as well. How much more sensible it would be to pursue the Regional standardisation policies under responsible Chief Mechanical Engineers, instead of starting off on an entirely new policy which is unlikely ever to reach completion. The only Region in which a new standardisation policy is either justified or called for is the Scottish Region where special problems arise owing to the fusion of two formerly separate systems.

It is generally agreed that both the former L.M.S.R. and L.N.E.R. were too large. The G.W.R. and Southern were of more manageable proportions. The one good feature of nationalisation is the transfer from four Regions on the old system to six Regions on the new system. If the six Regions were to become separate companies there would be every possibility of securing efficient and enthusiastic management. At the same time a great saving would be achieved by eliminating the Executive and its staff.

Yours faithfully,

J. M.

[Provision is made in the Transport Act, 1947 (Clause 5), for the establishment of the Executives, and presumably elimination of one or all of them would require an enabling Act. The organisation of the Executives, and in particular, whether their members should have functional duties, is not defined in the Act.—Ed., R.G.]

Accident near Lamington

70, Sandhurst Street,
Liverpool, 17. January 1

TO THE EDITOR OF THE RAILWAY GAZETTE
SIR.—With reference to the point raised by Mr. W. A. Tuplin in your issue of December 17, it would be enlightening to discover whether there is any recorded instance in which it can be proved that the fusing of the metal in a fusible plug has saved a firebox from heavy damage necessitating renewal or extensive repairs.

The only cases that I can recall in which temporary shortage of water has not caused serious damage are when the engines have been on the running shed with a small fire, or subject to momentary shortages due to the surging of water through sudden changes of gradient, or excessive "braking" while engines have been working trains and the water has been allowed to get too low for safe working.

In instances where the water level has fallen below the crown of the firebox on engines working trains with a fire of normal temperature, my opinion is that the result is invariably the destruction of, or serious damage to, the firebox, entailing subsequent renewal or heavy repairs.

Yours faithfully,
E. SMITH

The Oerlikon Gyrotractor

Ateliers de Construction Oerlikon,
Zurich-Oerlikon, Zurich,
Switzerland. January 6

TO THE EDITOR OF THE RAILWAY GAZETTE
SIR.—In your issue of October 22, 1948, Mr. Richard J. Deacock raises the question of whether the principle of the gyrotractor has not been used before.

The principle of the flywheel-driven vehicle is not regarded by us as at all new. Going back as far as 1875 one finds the flywheel principle used for propulsion on the Howell torpedo and an English patent of Lanchester (1905) speaks of electrically-spun up flywheels for cars. For toy propulsion the flywheel has been known for a much longer time.

The use of flywheel sets as an auxiliary power source on trains in combination with electrical machinery was discussed in the technical press as early as 1934. From this point of more or less theoretical knowledge to the possibilities opened by the Oerlikon Electrogyro vehicle—able to run for distances up to 10-15 miles on the energy stored in the flywheel and to be recharged from the 50 cycles a.c. net in a few minutes—much technical ground had to be covered.

Experience gained on our works with an 11-ton rail tractor for shunting purposes has given convincing proof of the possibilities of the system. In the hands of an unskilled operator the tractor handles the greater part of our works transport

and hauls loads of 200 tons or more on a not too good rail system.

Principles embodied in the Oerlikon Electrogyro may be of interest. Placing the flywheel and the electrical machine inside a closed container filled with hydrogen or helium—without shaft seals—was necessary to reduce windage losses. Use of a closed container created the need for eliminating such parts as collectors, sliprings, brushes, etc., and only the squirrel-cage machine, running as a motor during the starting period and as a stator-excited generator during the discharging period, could give the answer.

On the other hand, the characteristics of the normal squirrel-cage motor are not very pleasant for starting heavy rotating masses, the starting current being high and the power factor low. Also the heat problem had to be considered. A special arrangement of the electrical circuit enables the Electrogyro to be recharged at practically constant current at a power factor better than 0·8 on the average; this permits the recharge energy to be taken from a normal 50 cycles industrial network.

The internal cooling of the motor has also been solved in a satisfactory manner. The use of multi-speed squirrel-cage motors for driving the vehicle has proved a sound proposition. Smooth starting without shocks, combined with a very good pulling power, and speed regulation have been achieved. Safety questions also had to be considered, and constructions created eliminating every danger due to seizing of the bearings, impacts by collision, etc.

The real possibilities of these vehicles for rail and road, ferries, etc., can be proved only by practical experience. To avoid setbacks a cautious development has to be advocated and only problems which are well inside the possibilities of the system should be tackled. On rails the actual experience shows that the problems already are solved. Passenger railcars for running with or without trailers today present no difficulties on a fairly level stretch. Also, shunting locomotives for industrial works, mines, etc., are a sound proposition.

A passenger car for road service is actually under construction and will be ready for test next summer. The car will carry from 50-60 passengers, and will be able to run for about 150-200 miles a day on the level, picking up energy at the major halts. On one charging it will run from 4-5 miles in normal town service.

Yours faithfully,

B. STORSAND
Chief Engineer, Rectifier Department,
Ateliers de Construction Oerlikon

Fare Increases

13, Outwood Drive, Heald Green,
Cheadle, Cheshire. December 31

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—In the recent debate in Parliament on railway fares, Mr. James Callaghan, the Parliamentary Secretary to the Ministry of Transport, stated in no uncertain terms that present-day railway fares were only about 10 per cent. above the 1928 level, and this statement was widely reported.

In 1928 the third class standard fare was 1½d. per mile; today it is over 2½d., an increase of approximately 60 per cent., not 10 per cent.

He also contended that railway fares had only increased 55 per cent. above pre-war level, and in support of his contention quoted certain fares, but missed the point completely.

It is agreed by everybody that the standard season and monthly return fares have increased only 55 per cent., but the increase in the fares *actually charged* in hundreds of thousands of cases is considerably more for reasons which I have stated previously in your columns.

Incidentally, he disputed that the day excursion fare from Manchester to London was 37s. 6d. (which is the case), an increase of 136 per cent. over the pre-war 16s. 3d., and quoted a fare of 23s., which was hardly in support of his argument, as, apart from this fare being the *half-day fare*, the increase over the pre-war *half-day* fare of 10s. 6d. is over 100 per cent!

Your readers will know for themselves similar examples all over the country. I could quote plenty, but space forbids.

Again, in his anxiety to prove that nationalisation had been beneficial he referred to the improved timekeeping in October, 1948, over October, 1947, but even if the railways had not been nationalised timekeeping would have improved by reason of the repairs, improvements, and so on that would have been carried out in any event after the end of the war.

He did not answer the suggestion and belief which is widely held that bus fares are to be increased to try to drive the public back on to the railways. He gave a list of cheap-fare facilities which had been introduced since "nationalisation day," but the list, though apparently impressive, is, as most of your readers will realise, nothing like so impressive as it

seems. Cheap day tickets, though being extended all the time, still fall far short of pre-war. Cheap half-day and day, and any-train-any-day facilities are still not issued on the scale which the situation requires and demands every day more urgently.

The early closing, Sunday bargain, football, and night travel tickets which were so popular before the war have still not been restored. Incidentally, perhaps Mr. Callaghan or some member of the Railway Executive will give particulars of the percentage or number of cheap tickets, excluding monthly return and weekend tickets, comprised in the total of 474,000,000 journeys on "Monthly Return, Excursion, etc., Tickets" shown in the Ministry of Transport Returns for 1938.

Mr. Callaghan enlarged on the fact that up to October 3, 1947, approximately 27,000,000 people travelled by cheap day tickets and that since January 1, 1948, "when the railways came under public ownership and control," that figure had increased from 27,000,000 to 59,000,000. That, Sir, is not fair to the railway officials concerned, for, if Mr. Callaghan will refer to his speech in Parliament in December, 1947, on this same question, he will see that he stated that the Minister of Transport was only too anxious to extend the issue of cheap tickets, from which it may reasonably be inferred that the Minister of Transport was controlling their issue and therefore the comparison is not a fair or valid one.

This matter is one of the utmost importance and daily becomes more important, and with due respect your theme should be not "Shorter Trains and More of Them," but "More Cheap Tickets, and That at Once."

Yours faithfully,
ERIC DYCKHOFF

High-Speed Trains

Frognal, N.W.3. January 8

TO THE EDITOR OF THE RAILWAY GAZETTE

SIR.—The article in your issue of January 7 on "Standardisation of Rolling Stock" states that "the intention of the Railway Executive is to raise the average speed of all trains rather than to run a few high-speed trains to the detriment of other railway users." This seems to suggest that the running of high-speed trains before the war slowed down ordinary trains. That was not the case on the London & North Eastern Railway, the high-speed trains of which were merely the "high lights" in a prolonged effort to quicken passenger services all round. The table below gives their average figure of coaching steam train miles per train hour from 1934 to 1938, for the whole system and for the North Eastern and Southern Areas.

L.N.E.R. system	North Eastern area	Southern area
	(Train miles per hour)	
1934	14·34	15·79
1935	14·47	15·97
1936	14·49	15·93
1937	14·47	15·83
1938	14·55	16·21
		13·75
		13·84
		13·89
		13·93

The table shows that, by dint of good team work between the operating, locomotive running, and mechanical engineering departments, the 1934 train speed was exceeded in each year from 1935 to 1938. The first of the high-speed trains—"The Silver Jubilee"—started to run in September, 1935; the "Coronation" and the "West Riding Limited" came on the scene two years later. The three "speeders" were thus running in 1938 when the average steam passenger train speed reached record heights.

These magnificent trains undoubtedly helped to make the railway staff keen on their work, as well as arousing an interest bordering on enthusiasm among the travelling public.

Yours faithfully,

R. B.

[We think what is needed is a higher general level of train services. The running of high-speed trains calls for special provision in train paths and a high priority in running over other trains. It is very difficult to ascertain whether extra traffic attracted by a high-speed train offsets the greater cost of providing the service, or whether it is merely abstracted from other trains between the same points.—Ed. R.G.]

FENCHURCH STREET-SOUTHEND LINE IMPROVEMENTS PLANNED.

—Sir Eustace Missenden, Chairman of the Railway Executive, told a Southend deputation on January 18 that a committee was considering improvements to the Fenchurch Street-Southend line, including electrification, improved signalling, and an increased number of tracks. Though any programme which might arise from this investigation would be subject to the overriding considerations of the national economy, the Railway Executive was treating the matter as one of urgency.

The Scrap Heap

B.T.C. FAMILY RELATIONSHIPS

"... Since the (British Transport) Commission has not yet acquired the whole of its family, it has, I suspect, developed rather strong maternal instincts towards the Railway Executive. The relationship from the other side—again I give my personal impression—sometimes suggests the distant regard of a stepson, rather than a filial warmth . . ."—*Mr. Roland Bird, Deputy Editor, "The Economist," in a paper given to the Institute of Transport.*

* * *

A tawny owl stowaway was found at St. Pancras in the luggage van of an Edinburgh express. The owl probably flew into the train somewhere on the journey.

* * *

100 YEARS AGO

From THE RAILWAY TIMES, Jan. 20, 1849

We learn from the *Manchester Courier* that the festive season of Christmas was made available for one of those meetings in which the gratification of the best feelings in their widest range is attained by the mingling together of persons of all classes, engaged in one common cause. The clerks and porters of the London and North-Western Railway, through the kindness of Mr. SALT, manager of the goods traffic of the line at the London-road station, nearly 500 men and women were assembled together, and amused during the evening with the exhibition of various inventions, and addressed by the Chairman (Mr. KAY) and others in a manner that came home to the feelings of all present.

These little touches of domesticity will, we hope, be carried home by the wives and female relatives of those present, and generate comfort at many hearths. A handsome tribute of thanks was paid to the energetic exertions of Mr. SALT in procuring for the men under his command the institution of a library and reading-room.

STATION WAITING ROOM FIRES

Moved by the plea I made for waiting room fires at railway stations, a London colleague asked the Railway Executive for their views on this aspect of travellers' comfort—or discomfort. The official who answered seemed grieved to hear that any passenger had found a British Railways waiting room cold. "Of course," he said, "we are trying to economise in the use of coal, but instructions have been issued that fires are to be lit whenever the weather is very cold or foggy, or when trains are held up."

The difficulty appears to be that the final word at any particular station rests with the Stationmaster. Snow, ice, fog and train delays bring a host of even more urgent problems to this harassed official, who may sometimes forget to point out to the employee responsible that these conditions justify a fire.—"Northerner II," in "The Yorkshire Post."

* * *

THE WEAKER SEX

Women ought to give up their seats in trains and buses to men, according to Dr. George Lawton, a Chicago psychologist. They ought to do so, he believes, because they are stronger and better able to cope with the strains and stresses of travelling. He supports his thesis with statistics.

If what Dr. Lawton says is true, then womankind owes mankind a substantial collective apology. Men have stood about enough from women, and from now on they may remain seated with full psychological sanctions.

The situation is ridiculous. A man, a careworn breadwinner, bowed down with responsibilities and a chronic victim of travel sickness, is sitting miserably in a bus when a woman, single, slightly younger, as fit as a fiddle and revelling in the joys of travel, by sheer unscrupulous moral pressure, coerces him into giving up his seat.

Women are conspicuously lacking in chivalry. They take advantage of the weak and defenceless under the pretence that they themselves are fragile, delicate creatures.—From "The Scotsman."



"Well, it says here on the back of the tariff: 'It will be appreciated if passengers will report any unusual service or attention'"

[Reproduced by permission of the proprietors of "Punch"]

Midland Memories

The Midland Railway had a very definite individuality and many most interesting characteristics. The rival "Premier Line" boasted of the "Finest Permanent Way in the World," but the Midland certainly had the tidiest. Everywhere there was an air of neatness and tidiness, not a stone appeared out of place. The line-side hedges, moreover, were always well laid and well kept.

The Midland men had a weakness for flowers. Scarcely a whitewashed brick platelayers' cabin beside the line but had its small beds of roses and other flowers. Just north of Elstree Tunnel the men went one better. Beside their cabin was a model of the adjacent tunnel-mouth with single-wheeler emerging, complete and in correct colours.

Beautiful station gardens were a feature, and beneath many of the characteristic Midland-pattern glass awnings flower baskets were suspended. Beside the line from Cricklewood to the Finchley Road tunnels, and at intervals almost to the approaches to St. Pancras, it was flag irises all the way.

The unmistakable feature of every Midland station was the Stationmaster. Usually attired in a frock-coat, he wore the typical hard "pill-box" hat with narrow gold band round its base. Over the peak was the inevitable Midland "Dragon" with the neat M.R. monogram beneath it. No need to label him Stationmaster. More dignified functionaries had, I believe, wider gold bands, while the most important people were arrayed in top hats (without gold band).

Station clerks wore uniforms. The Midland guard was quite a neat figure, but he did not rise to the heights of resplendence of his opposite number on the London & South Western or "Brighton" railways.

Another commendable Midland feature was the metal "board" which stood beside each tunnel mouth giving name of tunnel and its length in yards. All were removed "for security reasons" during the late war and few have reappeared.

The easily readable mile and quarter-mile posts remain, but the Midland pattern signal is fast disappearing. In design a little ungainly, with the semaphore arm bracketed on the front of the post, the arm formerly bore a round white dot instead of the customary white band.

But the most abiding "Midland Memory" of all is of the marvellously maintained and beautifully-kept stud of veteran engines which operated the London suburban services well into the 1920s. They were an amazing collection, some almost as old as the line they worked over.

That early slogan "Midland for Comfort" was well merited. For suburban services the Bain carriage with its clerestory roof provided a standard of comfort scarcely equalled today. Plenty of light, plenty of leg-room, comfort, and good appearance. While much old coaching stock remains, the Bain stock of the good old days has, unfortunately, almost completely disappeared.

One more Midland Memory remains, perhaps the greatest and most impressive of them all—St. Pancras Station. Not the station of these days, but the St. Pancras of 40 years ago, with its noisy (Westinghouse) "lodgers," the blue Great Eastern and bright green Tilbury—and that great glass roof.

—Extracts from an article by F. H. Stigemore in the January issue of "Railways."

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

Road Motor Services

Railway road motor services were extended in all provinces during the past year. The total route-mileage of 23,089 at the end of December, 1947, has increased to more than 25,000 miles. General purpose vehicles are used in outlying areas, but some of the new services are carried out with luxury passenger vehicles imported from Canada. Excluding the 100 Canadian luxury passenger buses, the number of vehicles in use exceeds 1,400, plus five 20-ton tank transporters purchased from surplus war stores, and 2,000 trailers.

During the past financial year, railway road motor services conveyed 12,917,322 passengers, nearly 2,000,000 tons of goods, and 2,809,000 gal. of cream, and the motor vehicles covered nearly 32,000,000 miles.

Major Export Items

Coal, manganese, chrome ore, and maize exports needed special consideration from the railways during the past year. The consumption of power station coal is now estimated at 15,340 tons a day as against 10,683 tons a day a year ago. In 1947 the Union exported only 501 tons of maize, but in October and November, 1948, alone the total was 255,000 tons or 2,550,000 bags. Manganese exports are averaging 27,825 tons a month, and chrome 26,625 tons.

Coal traffic increased from 13,722,811 tons in 1938 to an estimated 20,500,000 in 1948. Of the 6,700,000-ton increase, industrial, power station, and domestic requirements accounted for almost 5,000,000 tons. Because of the greatly increased volume of traffic which the railways are now carrying, they have had to increase consumption of locomotive coal to 5,500,000 tons a year as against 3,500,000 tons used in 1938.

INDIA

Agreement with Pakistan on Division of Stores

Full details are now available of the agreement recently reached between the representatives of India and Pakistan on the subject of division of railway stores. The Railway Partition Sub-Committee agreed on a number of outstanding points, namely, the division of Bengal Assam Railway and North Western Railway broad-gauge and metre-gauge goods stock, passenger coaches and locomotives, the B.A.R. marine flotilla and N.W.R. stationary boilers, saloons and ticket-printing machines. It was also agreed that there should be no further movement between the two dominions of partitioned general stores, and locomotive and carriage and wagon duplicates for running maintenance of rolling stock.

The heads of the operating departments of contiguous Indian and Pakistani railways now hold periodical meetings to settle operational details. It has been decided that the scope of these meetings should be extended so as to include matters which have now been agreed on. Other steps to be taken to implement the decisions of the Railway Partition Sub-Committee include the setting up of a number of new committees. One will undertake the division and programme for the transfer of the Indian reserve of girders,

permanent way material and construction plant. Another, consisting of two officers, one from each dominion, will review the position in respect of tools and plant and other miscellaneous equipment, and two committees, one for the N.W. Railway and the other for the B.A. Railway, each consisting of two accounts officers nominated by India and Pakistan, are to be appointed to look into the question of payment of various amounts due by one dominion to the other.

A problem which defied agreement, and had therefore to be referred to the Inter-Dominion Conference, was the division of MAWD locomotives on the B.A. Railway. Another important matter on which a decision is still pending is the proposal made by India some months ago regarding the revised regulations in connection with inter-dominion traffic in supersession of Indian Railway-Conference Association regulations.

CANADA

Newfoundland Railway

It is stated that the Canadian National Railways will make no changes in the Newfoundland Railway. Mr. L. W. Fairweather, Research Vice-President, C.N.R., said that operations on the government-owned Newfoundland line "are very efficient and we anticipate no difficulty in co-ordinating schedules." The Newfoundland Railway has steamship connections with the Canadian National Railways.

Heavy Freight Traffic

Freight traffic, which usually provides the backbone of earnings, has continued very heavy in recent months, according to tonnage figures of loadings. In October last a new monthly record was established. November figures show a seasonal decrease from the October peak, but are nearly up to the record November level of 1947. For 1948 as a whole, the tonnage figures are also establishing a new record. For the first eleven months the cumulative total is larger than for any previous corresponding period, and the December figure would have to slide very sharply to prevent the full year's total from topping the previous yearly peak, established in 1947 at 109,069,000 tons.

ARGENTINA

Summer Train Services

The summer timetables which came into force in December, 1948, were the first to be issued since the Transport Secretariat became responsible for the operation of the lines. One of the principal features, which may indicate the future policy, is a considerable reduction in sleeping car services, and a corresponding increase in the number of day trains as compensation. The new timetables are based on the transfer of lines from one system to another, which we hope to record fully in an early issue.

On the General Roca (ex-B.A.G.S.) Railway the principal innovation is a new bi-weekly day express, diesel hauled, between Buenos Aires and Mar del Plata. It covers the 400 km. in 4½ hr., an overall speed of 88 km.h., and cuts about one hour from the timing of the previous fastest schedule.

Other services to this seaside resort are three day expresses, two of which do not run on Sundays, a week-end sleeping car express, and a stopping train. To

Bariloche in the Argentine lake district the service has been increased from four to six trains weekly, two of which are diesel-powered between Patagonia and Bariloche, making possible a saving of 12½ hr. when compared with the timing of the all-steam trains. The former take 30 hr. 25 min. for the 1,742 km. run between Buenos Aires and Bariloche, contrasting with 42 hr. 50 min. for the latter. The practice of naming the principal expresses has been dropped.

On the General Mitre (ex-Central Argentine) Railway, the day services to Córdoba are the same as in the previous summer season—two day expresses from Buenos Aires and one from Rosario. However, the second part of "El Serrano" has been timed to run 2½ hr. later and has been renamed "El Cordobés." The daily sleeping car service to Córdoba has been reduced to three times a week only. Sleeping cars between Buenos Aires and Santa Fé have been abolished, and Santa Fé is now served principally by diesel railcars connecting at Rosario with the two daily Buenos Aires-Rosario expresses. The services to Santiago del Estero and Tucumán are unchanged with nine trains weekly (including the air-conditioned "El Tucumano" twice weekly), but much improved connections in Tucumán for Salta and Jujuy are now available four times a week through the introduction of express diesel services on the General Belgrano (ex-State) Railway.

The services between Buenos Aires and Tucumán on the General Belgrano Railway have been increased from five to seven trains a week via 17 de Octubre (Alta Córdoba), and from four to five via Santa Fé. The through service between Santa Fé, Mendoza, San Juan, and Catamarca is available three times weekly instead of twice. The daily diesel expresses between Buenos Aires and Rosario have been withdrawn and the stock utilised to provide new express services between Tucumán and Salta. Buenos Aires-Rosario traffic will be handled mainly by the General Mitre Railway.

On the General San Martín (ex-B.A.P.) Railway the day express "El Cuyano" between Buenos Aires, Mendoza, and San Juan runs daily instead of six times weekly, and a new day express, "El San Juanino," runs between the same points once a week, covering the 1,219 km. to San Juan in 17½ hr., an overall speed of 70 km.h.

Services on other railways do not show any major modifications.

ITALY

Reconstruction in 1948

Illustrating the progress of railway reconstruction during 1948, the Minister of Transport pointed out in a lecture that capital invested before the war in the railways totalled lire 49,500 million. Contrasting with this, the damage suffered during the war had been assessed at lire 37,000 million, or about 75 per cent. of the invested capital, bearing in mind that both figures were based on the same pre-war value of the lira. Based on the present-day value of the lira, damage amounted to lire 900,000 million (approximately £600 million).

Up to the end of September, 1948, reconstruction had been completed of the following: 3,927 miles of track; 28·4 miles of bridges; 27·8 miles of tunnels; 715 passenger station buildings; 68,560 rooms as flats for railwaymen; 612 goods sheds; 5,962 miles of overhead telegraph lines; 15,078 miles of overhead telegraph circuits; 16,643 miles of telephone circuits;

124 miles of aqueducts for the supply of feed water.

Motive power and rolling stock restored to service conditions comprised the following totals up to that date: 755 d.c. electric locomotives (3,000 volt and 650 volt); 550 three-phase locomotives; 3,159 steam locomotives; 186 electro-trains, electric block-trains and electric railcars; 401 internal combustion railcars; 7,500 passenger coaches, luggage vans and postal vans; 113,300 goods wagons, including 4,447 foreign-owned.

Thanks to the rapid progress attained in reconstruction the State Railways had successfully reduced the reconstruction expenditure by forestalling the steady rise in the cost of materials. Therefore, once reconstruction is completed the expenditure incurred in this connection would total only 700,000 million lire approximately (present-day value), of which some 400,000 million lire had already been expended.

The Minister drew attention to the increasing adoption of ball bearings for goods wagons, and to the fact that a large number of former aeronautical undertakings had turned to railway work.

FRANCE

Railway Loans Proposed

The receipts of the French National Railways at December 17, 1948, amounted to fr. 229,845,602,000. against fr. 127,191,477,000 in the corresponding period of 1947. In a Government statement to the National Assembly, the S.N.C.F. deficit for 1948 was estimated at fr. 28,000 million. M. Maurice Lemaire, Director General of the S.N.C.F., addressing the transport commission of the Council of the Republic, recently stated that the proposed budget credit of fr. 71,000 million for the railways was 25,000 million less than the estimate submitted for the approval of the Minister of Finance. In consequence only the section of the line

from Paris to Dijon could be electrified by 1950, and the electrification of the section from Dijon to Lyons could not be completed before 1953. M. Lemaire emphasised the necessity and the possibility of financing the operations by means of loans as the S.N.C.F. enjoyed the full confidence of the public.

In connection with economies in the consumption of electric power, the government authorities recently requested the co-operation of the S.N.C.F. Arrangements were made immediately to place all the 620 oil-burning locomotives of the S.N.C.F. in service. Some of these engines would be run over electrified lines to economise on the electric supply. The plan was designed to effect a daily saving of 350,000 kWh.

ROUMANIA

Completion of New Line

According to a recent message from Belgrade, the standard-gauge line between Cluj and Sarmas, in the north-west, the building of which was reported in our issue of September 17, 1948, was completed before the end of December last. The line is 34½ miles long.

BULGARIA

Railway Building

The Bulgarian Two-Year Plan (1947-1948) envisaged the expansion of the railway system (2,345 route-miles, at the end of 1946) by 74½ route-miles up to the end of 1948. Progress recorded so far indicates that the target is being approached. The avoiding line to the north of Sofia, between Poduene and Voluyak, and the Tsar Krum-Preslav line in the north-east were mentioned in our issue of October 1, 1948. Since then, a standard-gauge line, 22 miles long, was opened between Lovetch and Troyan in the north. It is understood that the special train and locomotive which inaugurated the traffic on that line were constructed entirely by youths, and

that the line itself was constructed by youth brigades.

Between Voluyak, 3½ miles north-west of Sofia on the Sofia-Belgrade main line, and the health resort of Bankya, a standard-gauge railway, some 12½ miles long, has existed for some years. It is now being extended as far as Pernik, the coal mining centre south-west of the capital, to provide an alternative route for coal traffic. Of the coal consumed by the Bulgarian State Railways, 90 per cent. originates from the state-owned Pernik coalfields. At present, Pernik is connected with Sofia by a standard-gauge line, 26 miles long, which forks at Radomir for Guechevo on the Yugoslav frontier, and for General Todorov, on the Greek frontier. Opening of the Bankya-Pernik extension was due at the end of 1948.

Orjahovo, a Danube port, is being linked with Vratza on the Sofia-Mezdra-Vidin main line, 68 miles north of Sofia, by a line 56 miles long. Silistra, the country's easternmost Danube port, is to be connected by a line, 7½ miles long, with Samuil on the Ruse—Varna line (the Danube-Black Sea chord line). Samuil is 66 miles south-east of Ruse and 15 miles east of Razgrad, the only place of consequence on the Ruse-Varna line except the two termini.

Another line now building will connect Makotzevo, north-east of Sofia, with Klisura, 4½ miles further east. Makotzevo is the terminus of a standard-gauge railway, 29 miles long, branching at Ilentzi, five miles north of Sofia, from the Sofia-Ruse main line. No indication has been given of the date of completion. Klisura is to be only a temporary terminus as the line is to be extended ultimately as far as Sopot, the terminus of a 3½-mile standard-gauge extension from Karlovo in the east on the standard-gauge line for Tulovo, Stara Zagora and Burgas. Once the Makotzevo-Klisura-Sopot link is completed a shorter route between Sofia and Burgas and Varna, the main ports on the Black Sea, will be available.

Beyer-Garratt Locomotive in Tanganyika



Beyer-Garratt 4-8-2-2-8-4 locomotive at Morogoro on the Tanganyika main line of the East African Railways. The projected Rhodesia-East Africa railway may cross the line in this district

Publications Received

School Science. Book III. By C. W. Wood. Leeds, 10: E. J. Arnold & Son Ltd., Butterley Street, Hunslet Lane, and at London, Glasgow, and Belfast. 8*1*/₂ in. x 5*1*/₂ in. 80 pp. Illustrated. No price stated.—Various aspects of physics, chemistry and biology are dealt with in this third book of the "School Science" series, and there are chapters on such topics as states of heat and its measurement, the volume, pressure, and temperature of gases, and the pressure of liquids. A fine selection of photographic illustrations is provided in addition to the more usual diagrams.

The **L.M.R. Locomotive Reference Book.** Compiled by R. P. Sykes. Published on behalf of the British Locomotive Society by Christian & Sykes, 42, Coombe Road, Handsworth, Birmingham, 20. 7*1*/₂ in. x 5 in. 98 pp. Paper covers. Price 3*s*.—This booklet gives a complete stock list of all the locomotives of the London Midland Region, and former L.M.S.R. locomotives of the Scottish Region, with an up-to-date allocation list, and facilities for recording individual transfers. There also are notes on the 1948 renumbering scheme, and a list of motive power depots and sub-sheds, with official codes.

The Swiss Federal Railways Today.—The Swiss Federal Railways have issued an attractively illustrated 46-page booklet describing graphically the comprehensive train service now offered to the travelling public. An attempt has been made to present a general picture of the Federal Railways and an account of their achievements and responsibilities towards Switzerland and its people. During 1947 some 213,000,000 persons, equal to about half the total population of Europe, were carried by the railways. This, in a country with a population of only 4,000,000, is a remarkable achievement. The S.F.R. is the greatest industrial enterprise and the largest employer of labour in the country, with 33,689 officials, workers and apprentices. The booklet, which is the subject of comment in an editorial article this week, is available in English, French, German and Italian. If the present issue is well received a further periodical issue is contemplated.

Ingenieria Ferroviaria (Railway Engineering). Monthly technical journal published by Editorial Golosa, Avenida de Mayo 963, Buenos Aires, Argentina. (London Representatives: Joshua B. Powers Limited, 14, Cockspur Street, S.W.1.) Overseas subscription \$16 per annum, or \$36 for three years.—This new illustrated railway engineering journal, the first number of which has just appeared, has been founded in an endeavour to provide the railway world of Latin-America, and especially the Spanish-speaking parts of it, with a medium for the exchange of technical information on every aspect of its work. The railway system of Argentina, not to mention any other South American country, is of great and growing extent and importance and offers a wide market for the supply of the most modern types of rolling stock, signalling, locomotives, telecommunication equipment, and the many other items that go to make up a railway today. The first issue, which is well illustrated, contains articles dealing with the arrival of new steam locomotives for the Argentine State Railways, the international line from Salta to Chile, the purchase of the former British-owned lines, the excitation of generators used with

diesel-electric working, diesel-electric locomotives in England, the lighting of trains, rail welding, compression-condensation on locomotives, and other topics.

Pride of Service.—The Railway Executive has produced a folder to attract recruits to the railway industry and in appearance it is a pleasing effort. The information contained within this type of publicity necessarily is very brief, and it is important that any further details sought by the prospective recruit should be easily available. The recruitment of suitable young men for British Railways is of singular importance and in bringing the advantages of such employment to their attention, this folder should prove of considerable value.

Conquest! The Story of the Santa Fe and the Men who Built It. From the Atchison, Topeka & Santa Fe Railway we have received a copy of this booklet which contains the pictures and script of the company's historical 35-mm. film of the same name. The Santa Fe was conceived and built by Cyrus Holliday, a young settler from the east who founded the town of Topeka. Unlike many early Western lines, it was built "to last." Its progress was amazingly rapid—28 miles to 7,400 miles in 18 years! The highlights of Santa Fe expansion—the "capture" of the Raton Pass and the advance south-west into California and north to Chicago—are shown, and the booklet concludes with a review of the scenic glories of the line, and its traffic, motive power, and trains.

De Danske Statsbaner, 1847-1947 (The Danish State Railways, 1847-1947). Copenhagen: Published by the Danish State Railways and printed by Det Berlingske Bogtrykkeri. 732 pp., 381 illustrations.—With this fluently written and well illustrated book, the Danish State Railways have raised a monument not only to themselves but also to railways in general, in so far as the development within the limited sphere of the Danish kingdom may be said to be typical of railway development at large. The eighteen main chapters and numerous sub-chapters, each written by the author most conversant with the subject, cover all conceivable aspects of the railways and their relations with the public.

To begin with, there are several chapters on the historical development not only of the Danish railways themselves, but also of their social and industrial background. There is also an interesting appreciation of the influence of the railways on the transformation of old towns and the formation of new ones.

Over 150 pages are devoted to railway installations in Denmark. Other chapters are concerned with features especially characteristic of railway conditions in Denmark, such as the famous "Great Bridges" between Jutland and the major Danish isles. There are also descriptions of the equally famous train ferries and ferry harbours which ensure direct rail facilities between the principal parts of the country, notably across the Great Belt, but also with the Swedish ports of Malmö and Helsingborg and the German port of Warnemünde. Yet another chapter deals with the special installations for the electrified suburban lines of Copenhagen.

Another hundred pages cover rolling stock and its maintenance. Apart from the historical and general interest attached to the subject, special interest is centred on the famous "Lyntog" diesel-electric

express trains which were an outstanding instantaneous success when introduced on the opening day of the Little Belt Bridge in May, 1935. There has also been interesting development of other types of diesel-electric vehicles, both locomotives and railcars; some of the latter are also used on the non-electrified sections of the Copenhagen suburban lines. On the electrified suburban lines to Klampenborg and Holte, the Danish-built, British-equipped rolling stock has been considerably increased and re-formed since the commencement of electric operation in 1934, so that a normal full-length train now consists of four 2-car units instead of two 3-car units.

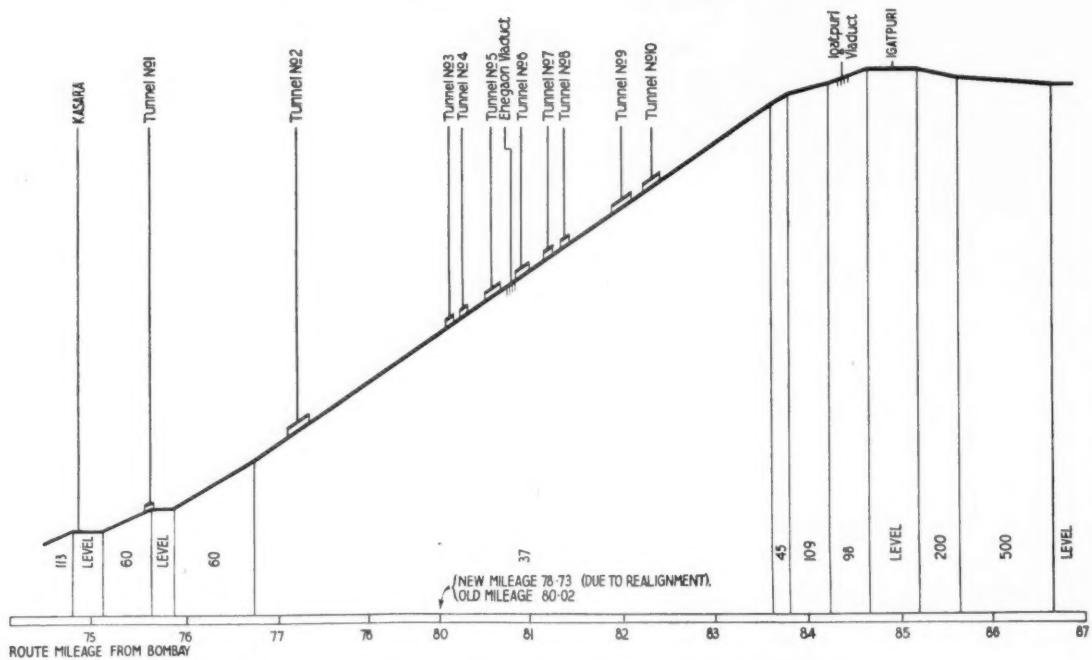
Further main chapters deal with the railway repair shops and laboratories, the development of timetables and traffic, the history of staff relations and working conditions, the co-operation between the State Railways and the privately-owned railways, the relations with the postal and customs authorities, the commercial activities of the State Railways, their publicity and economic results, and the part played by the Danish railway administration in international railway affairs. The narrative is rounded off by an account of the special difficulties which the Danish railways had to cope with during the war and the German occupation.

It is to be regretted that the full appreciation of the book must remain a preserve to those acquainted with the Danish language, although even those not familiar with it will appreciate the fine illustrations and the inspired conception of this work.

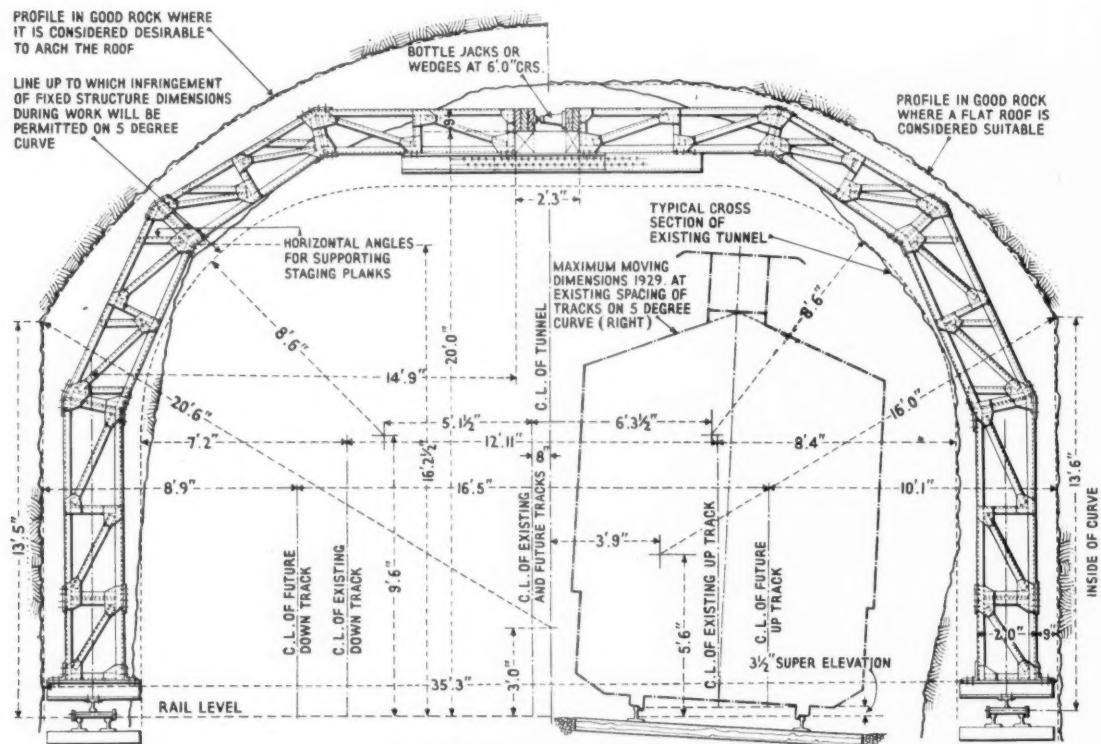
Concrete-Breaking Tools.—The firm of George Monro Limited, of Waltham Cross, Herts, has issued a new illustrated folder describing the Roadall hand-operated concrete-breaker and its associated tools. The Roadall is claimed to have a performance equal to the motor-driven compressor, and far in advance of any other hand method. One man using the Roadall "S.T.2" tool can accomplish better work than two men with hammer and chisel. There is also a Roadall "S.T.4" tool for use by two operators. The range of chisels and cutters is interchangeable between the two models. Illustrations of the Roadall and associated tools in use were published in an article describing G.W.R. maintenance equipment developments in our issue of May 16, 1947. The range of equipment includes special hand tools for driving posts and boards.

Steel Tubes for Structural Work.—This is the second edition of a booklet published in 1943. Since then, there has been a steady increase in the purposes to which tubes can be applied, and in size range. For example, multi-purpose jibs on cranes, grabs, pile drivers, drag-line excavators, etc., show an increased strength and rigidity in tube, with a saving of 30 to 40 per cent. in weight in comparison with former types. Hitherto, there has been some difficulty in obtaining data in a convenient form, and to meet this need the scope of the present booklet has been extended to cover tubes of from $\frac{1}{2}$ in. o.d. by 15 w.g. thick to 12*1*/₂ in. o.d. by $\frac{1}{2}$ in. thick, together with particulars of structural properties. Notes on strut calculations have been extended to include the basic form of the formulae used in B.S. 449. Copies of the booklet, which the publishers propose to issue in more detailed form when circumstances permit, may be obtained from Tubewrights Limited, Brook House, Upper Brook Street, London, W.1.

Tunnel Widening on the Thull Ghat, G.I.P.R.



Gradient profile of the Ghat section between Kasara and Igatpuri



Typical cross-section of unlined tunnel on 5-deg. curve right, where widening has to be done equally on both sides, showing travelling staging in position

Tunnel Widening on the Thull Ghat, G.I.P.R.*

Work is in hand to remove infringement of standard running dimensions on the double line up the Thull Ghat on the Great Indian Peninsula Railway

THE Thull and neighbouring Bhore Ghat inclines are probably unique, considering the volume of traffic carried. The whole of the inland traffic between the great port of Bombay and north-eastern, eastern, and southern India and also a large proportion of that to and from Delhi and northern India is carried by the G.I.P.R. At Kalyan junction, some 40 miles from Bombay, its main line bifur-

Southern India generally. About 30 miles beyond Kalyan both main lines have to face the formidable Western Ghats of India, the name given to the abrupt and rugged declivity from the central or Deccan plateau to the coastal area. The north-east line climbs this barrier by the Thull Ghat incline, and the south-east line by the Bhore Ghat. Before the war, traffic via the Thull Ghat included the luxurious

double line involving 13 tunnels, a 180-ft.-high viaduct, very heavy earthworks, mostly in solid trap rock, and a rise of about 950 ft. concentrated within a distance of some ten miles was formidable task. The ghat slopes are, moreover, precipitous and broken, and the decision to build for the future with a double-line railway was, therefore, all the more heroic and far-seeing. Unfortunately, the spacing of the tracks was only 12 ft. centre to centre, an infringement of the modern standard running dimensions (15 ft. 6 in.), which has proved a considerable and increasing handicap for many years past, in prohibiting the use of wider rolling stock and the carriage of out-of-gauge loads. This disability has become accentuated since the line was electrified in 1928, and it is to remove it that important engineering works are now in hand.

The construction works, completed in 1865, included a reversing station, which, as it proved a serious deterrent to rapid traffic movement, was replaced by a half-mile realignment in 1916. The incline begins at Kasara, which is 75 miles from Bombay, and 970 ft. above sea level, and ends at Igatpuri at an elevation of 1,918 ft. Before the elimination of the reversing station the mileage of Igatpuri was 83, and on the ten-mile ascent there were 13 tunnels. By the realignment the length was reduced to nine miles and the number of tunnels to ten. The ruling gradient is 1 in 37 and extends unbroken for six miles, so that of the total rise of 948 ft. in nine miles, some 780 ft. are accounted for by the six-mile 1 in 37 length. The sharpest curve is 5 deg. (17-ch. rad.), another tribute to the foresight of the construction engineers, but a main factor in contributing to the heavy works involved.

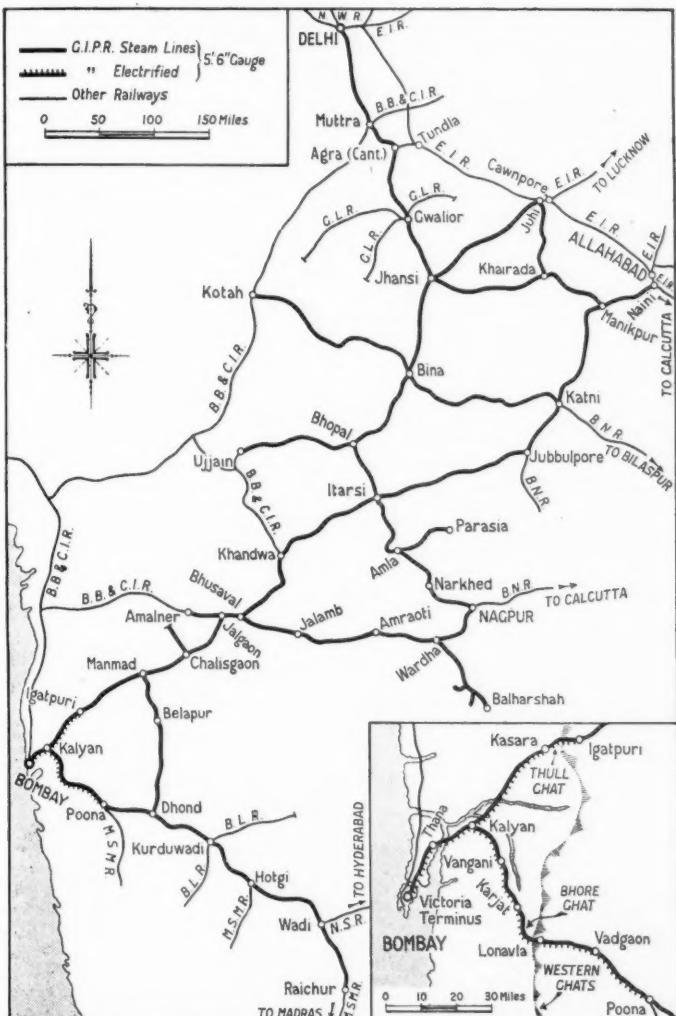
Ehegaon Viaduct

The Ehegaon viaduct consisted originally of three pin-truss deck spans with two girders under each track, and four 40-ft. arches. The girders were fabricated on the ground and jacked up through the whole 180-ft. height, their ends and the jacks being in vertical grooves or recesses in the pier masonry, which was built up to fill the grooves as the jacking progressed. In 1899 these girders were replaced by single girders placed between each pair of the old girders under traffic. After the decking had been erected the old girders were removed.

Works to Eliminate Infringements

In 1928 a survey was carried out to decide how best to remove the infringement of standard running dimensions. The widening of the tunnels was considered likely to be extremely difficult under traffic and, instead, the driving of new single-line tunnels parallel with those already in existence was recommended. However, when the work was sanctioned by the Railway Board in 1945, it was decided to convert one tunnel into an open cut and to widen another; all the others are being duplicated. The widening of the tunnel is being carried out with the aid of travelling steel staging astride both tracks, permitting the passage of trains beneath it and allowing the overhead contact and catenary wire to be passed below it; the staging moves along on rails within the profile of the widened tunnel.

The work on this tunnel is proceeding at about 2 linear ft. a day, at a cost of about £19 a foot, or half that of a new single-line tunnel. The blasting charges are fired at night during traffic line-blocks, and the bore holes are usually 5 ft. deep and 2 ft. apart, each charged with one or half



Principal G.I.P.R. lines radiating from Bombay, with inset showing location of the Thull and Bhore Ghats

cates. The north-east main line runs thence to the cities of Delhi and Cawnpore, Agra, Jhansi and Allahabad, in the United Provinces, and to Calcutta, via Jubbulpore and the East Indian Railway, and via Nagpur and the Bengal Nagpur Railway.

The south-east main line strikes southwards to Poona and serves Madras and

weekly "Imperial Indian Mail"—to and from Calcutta—and daily mails to and from the Punjab via Delhi, and Calcutta by both routes, as well as expresses and through passenger trains over all these routes, and a great volume of goods traffic.

Building of the Line

In the early 1860s, when the railway was constructed up the Thull Ghat, there were no high-grade steels, compressed air plants, nor modern explosives available to the engineers, so that the building of a

* Based largely on a note prepared by the Chief Engineer of the G.I.P.R. for the Bombay & Western India members of the Permanent Way Institution, who paid a visit to the Ghat in March, 1947.

a stick of gelignite. The overhead wires are slackened to prevent damage from blast, and the tracks and structures are protected against falling boulders by a wire net. Among other new works is the construction of a 60-ft. retaining wall.

The Track and Safety Measures

Permanent way on the ghat consists of 100-lb. bull-head rails secured with steel keys. Though these are generally effective, a creep-adjusting gang is regularly employed in pulling back. Runaway catch-sidings are installed at intervals on the ghat. They take off the descending track, but also safeguard ascending runaways, as a 1 in 12 trailing crossover, with spring-controlled points, is sited just above

the catch-siding points in each instance. Descending trains have to stop dead just short of the catch-siding points, which are normally set for the siding and are reversed only when the train is stationary; this ensures that the load is under control, and at least one catch-siding is designed to bring to rest a train running at 50 m.p.h. Rigid testing of brakegear and the regenerative braking of electric goods locomotives are other safety measures in force.

On descending goods trains with two heavy engines using regenerative braking there is a risk that empty or lightly-loaded wagons close behind them may be lifted or thrust sideways and derailed by the powerful braking force. A special rule, therefore, lays down that no wagon of less than

18 tons gross weight may be attached nearer than the fourth vehicle, none of less than 15 tons nearer than the twentieth vehicle, and none of less than 12 tons nearer than the twenty-first vehicle behind the engines.

Unlike the vacuum brake, regenerative braking ensures a steady uniform speed—usually about 12 m.p.h.—even on varying gradients. The vacuum brake, however, is invariably retained in reserve against failure of regenerative braking, and to control the train before regeneration is switched on and after it is switched off. Similar regulations are in force for the Bhore Ghat, which, although its ruling grade is not quite so steep, is twice the length of the Thull Ghat.

The Progress of the Stockholm Underground

Financial stringency may halt work, already well advanced, on the western section, but the southern section is expected to be opened this year

ACCORDING to an announcement made by Minister Sköld at a conference attended by representatives of the Stockholm city council there is a likelihood that the municipality will not be granted permission to continue the construction of the western section of the Stockholm underground railway, the complete plan for which was outlined in our October 24, 1947, issue. The present adverse trend in Swedish economy, in particular, shortage of dollars, which has resulted in the cancellation of orders for materials, makes it desirable to suspend work at least for 1949.

A concession will be made in respect of the completion this year of the southern section, which incorporates the existing tramway subway between Slussen and the Kanstull Bridge and of which the financial burden is therefore less onerous.

The platforms of the two intermediate tram stations, Medborgerplatsen and Ringvägen, are being lengthened to take eight-car underground trains.

The construction of the Stockholm underground system was decided on in 1941, and the work was begun after the war. The progress achieved since then has been notable, and important sections of the tunnels, mainly through rock, have been completed and others are nearing completion. The scheme envisaged the completion of the western line first, in 1951, the southern line in 1953, and the connecting link through the city centre in 1955. The partial stoppage of the work, and the slowing down on certain sections will have an adverse effect on the development of the suburbs affected, it is believed. The total expenditure for the building of the three sections was envisaged at kr. 310,000,000 (approximately £21,900,000).

The loss in respect of the capital sunk in the venture is understood to cause the municipality grave concern, as the largest part of the capital has been raised by loans for which interest has to be paid. Pending the completion of the lines, bus services will have to be instituted on the routes affected.

Great progress has been made on the western section, from Alvik over Tranebergs Bridge, thence in tunnel via Fridhemsplan, St. Eriksplan, Odensplan and Radmansgatan to a temporary terminus at Kungsgatan. The tunnel structure, which is just over two miles in length, has been almost completed by the Stockholm Highways Department, ready for equipping by the Municipal Tramway Department. The cost of the tunnel construction is

assessed at kr. 51,000,000, and the equipment another kr. 15,000,000.

The western suburban lines from Angby and Nockeby converge on Alvik station, which is being reconstructed with flying junctions and 480-ft. platforms to take eight-car trains. The existing light railway from Nockeby will not yet be converted to the new underground standard so that, for the time being, passengers from the Nockeby line will have to change at Alvik into trains from the Angby line, across a common island platform. The surface section from Alvik over the fine new bridge across the Tranebergs Sound to Drottningholmsvägen has already been opened for tramway operation.

The line will enter the new tunnel at Lindhagensgatan. Here, the tunnel is blasted into the solid rock. After 140 yd., the double-track tunnel splits into two single-track tunnels which, in turn, open up after another 500 yd. into the platform tunnels of the first underground station, Fridhemsplan. The platforms are 480-ft. long, gently curved from west to north and connected by cross-passages. The station is double-ended, with stairs and escalators leading up to surface ticket halls at Fridhemsgatan and Fleminggatan, respectively. At the latter exit, the ticket hall will be connected with a pedestrian subway leading across the main road.

Beyond the station, the two single-track tunnels converge again, after some 80 yd., into a double-track tunnel which emerges from the rock formation and is continued as a cut-and-cover tunnel of reinforced concrete right up to St. Eriks Bridge. Here, the line will break surface and use the lower deck of the double-tier road bridge across the Klaraviken Sound. The necessary structural alterations were anticipated when the road bridge was widened in 1938.

North of the bridge, the tracks re-enter the concrete tunnel below St. Eriksgatan to Karlbergsvägen where the line again turns due east. The intermediate station at St. Eriksplan has a 30-ft. wide and 480-ft. long island platform with exits at either end. The space between the tunnel roof and street level is to be used as a motorcar garage, to relieve the street of parking vehicles. A section of about 450 yd. below Karlbergsvägen is again blasted into the rock. Here, the two single-track tunnels are so arranged that the flying junction for a proposed branch line towards the north can be constructed,

at a later date, without any interference with traffic on the main line.

The next station, Odensplan, and the remainder of the line, are in cut-and-cover tunnel. Odensplan station has a vaulted roof. Just east of it, the line turns southward, into Sveavägen, passing close to several important public buildings, the foundations of which had to be strengthened by piles. Some slight settlement of the Commercial College was observed, and had to be remedied by underpinning. At the next station, Radmansgatan, the ticket hall is situated intermediate between tunnel and street.

Three-Track Section

The last section between Radmansgatan and the provisional terminus at Kungsgatan lies entirely below the wide thoroughfare of Sveavägen and is built for three tracks, with two rows of pillars between them. The central track is to be used for reversing and stabilizing trains. Because of its central position in the town, the station at the junction of Kungsgatan and Sveavägen is likely to handle a very heavy traffic even after it has ceased to be a terminus, and therefore no less than three ticket halls are being provided.

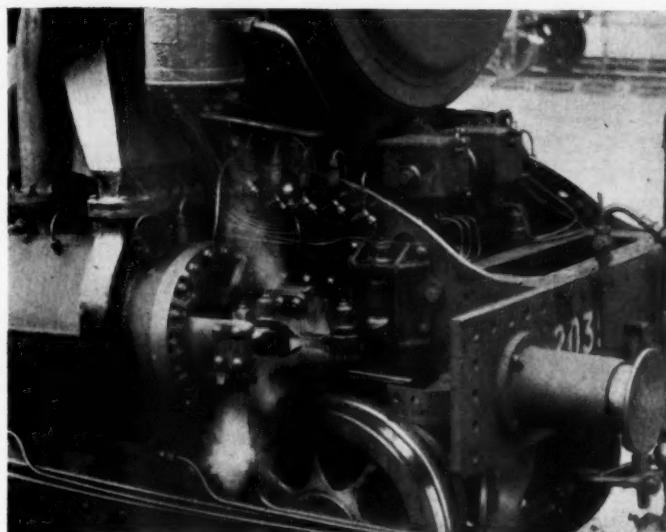
Where the tunnel sole does not consist of bedrock, it rests either on concrete slabs or pile foundations, according to local conditions. In particular, pile foundations have been required along Sveavägen. The cut-and-cover sections have been protected by sheet piling of timber or steel. The excavation depth hardly exceeds 40 ft. and reaches, in some sections, a level of 3 ft. below the subsoil water. Altogether, nearly 10,000,000 cu. ft. of earth and gravel have been excavated, and 4,500,000 cu. ft. of rock have been blasted.

Approximately 2,000,000 cu. ft. of concrete, containing 350,000 bags of cement, and 8,000 tonnes of steel have been used for the construction of the reinforced-concrete sections. The whole tunnel is drained by a pipe system with pumping stations, discharging into Klaraviken. The maximum gradient near St. Eriks Bridge is 1 in 25, otherwise 1 in 30. In accordance with wartime legislation still in force, gasproof air raid shelters have been provided below all the station platforms.

The central section will extend the line beyond its temporary southern terminus at Slussen to Tegelbacken, crossing the Söderström Channel on a bridge and the Norrström Channel in a tunnel. The final section, Tegelbacken-Kungsgatan, will be constructed last, as the alignment is still subject to town planning considerations.

Converted Brighton Atlantic Locomotive

One of the "H1" series of Marsh 4 4-2s has been reconstructed with sleeve-valve cylinders



External appearance of the cylinder, which incorporates a sleeve valve

IN connection with the design of the "Leader" class twelve-wheel tank locomotives, Mr. O. V. Bulleid, Chief Mechanical Engineer, Southern Region, has reconstructed one of the Brighton "H1" type Atlantics with a new design of cylinder, which incorporates a sleeve valve. Reference to this development was made in our November 19 issue, when it was pointed out that, as Mr. Bulleid considered any marked increase in thermal

efficiency and power output was improbable with piston valves as now arranged, further improvement had to be sought in other directions.

The rebuilt Atlantic locomotive is illustrated below and embodies cylinders with separate steam admission and exhaust ports. A single sleeve valve, inside which is the piston, controls the admission and expulsion of steam to the cylinders and slides inside liners of cast iron pressed

into the fabricated steel cylinders. During the course of its travel, a certain degree of axial rotation is imparted to the sleeve, by a system of levers. So that the flow of steam into the cylinder, as well as that of exhaust steam to the blast pipe, is not impeded, the ports, which are machined in the sleeve, are equally distributed around the circumference.

No. 2039—A Noteworthy Locomotive

The engine chosen as the guinea-pig in these tests is the old L.B.S.C.R. No. 39, which was one of the earlier series of Marsh Atlantics constructed in 1905 and 1906. At the time of their construction by Kitson & Company, these engines were not superheated and had 18½ in. by 26 in. cylinders. No. 39, together with No. 41, differed from the other "H1" class engines, in that it was provided with 19 in. dia. cylinders, though subsequently, the other three engines were brought into conformity. The first of the series, No. 37, originally was classified "B5"; it had 6 ft. 7½ in. dia. coupled wheels and carried a 200 lb. per sq. in. boiler, with a total heating surface of 2,473.5 sq. ft.

In Mr. J. N. Maskelyne's "Locomotives of the L.B.S.C.R." mention is made of a notable performance by No. 39, when hauling the Victoria to Brighton "Pullman Limited," one Sunday during 1907. On this occasion, the engine covered the 51 miles in 51 min. 48 sec., with a 245 ton train, and attained a maximum speed of 86½ m.p.h. between Balcombe and Wivelsfield. The same locomotive figured in the first public run of the "Southern Belle" All-Pullman express on November 1, 1908, and on the occasion of the French President's visit in 1913, received the name *La France*, which it retained until 1923.

Two of the "H1" class engines were withdrawn during the recent war, though their sister class—the "H2s"—remain intact and still put in an occasional turn on the Newhaven boat trains.



General view of the reconstructed Southern Region Atlantic locomotive No. 2039, "Hartland Point," showing the new front-end arrangement

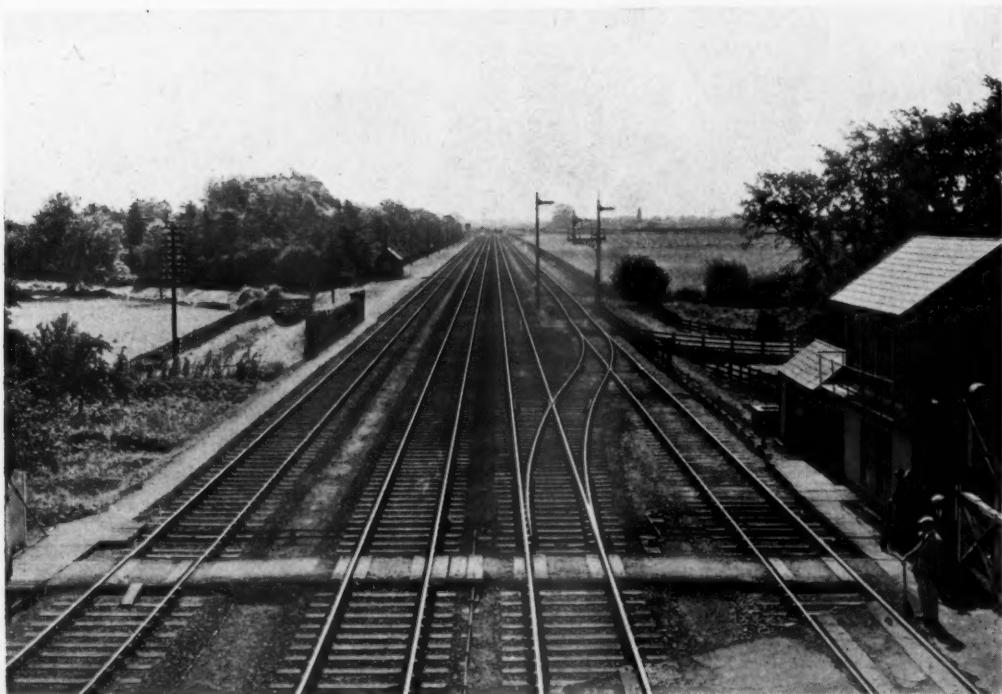
Photos

[P. Ransome-Wallis]

Well-Kept Permanent Way, Eastern Region



View looking west on the Clacton branch, showing permanent way awarded a prize in a competition for the best-kept lengths



View looking south along another prize-winning length on the main line of the Eastern Region at Lolham, near Peterborough

RAILWAY NEWS SECTION

PERSONAL

Lord Rusholme, a Member of the British Transport Commission, has accepted Vice-Presidency of the Railway Students' Association.

Mr. W. P. Bradbury, O.B.E., M.Inst.T., who is retiring at the end of next February from the position of Chief Commercial Manager, London Midland Region, British Railways, joined the L.N.W.R. in the District Superintendent's Office at Euston in 1905, and transferred to the Department of the Superintendent of the Line in 1910. He served in France from January, 1915, to September, 1919, and was twice mentioned in despatches and

main-line railways to draw up the comprehensive rail-air plan presented to, and accepted by, the Coalition Government in 1945. During his term of office in the position from which he is retiring, Mr. Bradbury has been a Director of several large associated road companies; Chairman of E. G. Oldham Limited; a member of the Road-Rail Panel; and has served on a number of important committees concerned with a wide diversity of interests, and in addition has been Chairman of certain Railway Executive inter-Regional Committees.

Mr. E. M. Rutter, who retired on December 31 from the position of Superintendent, North Eastern Region,

corporation, has accepted the Minister's invitation to succeed Sir Harold Hartley and Sir Miles Thomas will be succeeded as Deputy-Chairman by Mr. Whitney Straight, who will also continue to be the corporation's Chief Executive.

Sir Robert Burrows, a member of the National Coal Board and lately Chairman of the London Midland & Scottish Railway Company, and Brigadier-General Sir Godfrey Rhodes, at one time General Manager of the Kenya & Uganda Railways & Harbours, and now Chief Engineer & Special Commissioner for Works, Government of Kenya, are among those recently appointed Commanders (Brothers) of the Order of St. John of Jerusalem.



Mr. W. P. Bradbury

Chief Commercial Manager, L.M.S.R. and London Midland Region, British Railways. 1946-49



Mr. E. M. Rutter

Superintendent, N.E. Area, L.N.E.R., and N.E. Region, British Railways, 1940-48



Mr. Paul Gibb

Goods Manager, N.E. Area, L.N.E.R., and N.E. Region, British Railways. 1928-48

awarded the O.B.E. He was appointed Chief Staff Clerk to the Superintendent of the Line in 1922, and on the amalgamation in 1923 was appointed Chief Clerk, and four years later Assistant, to the General Superintendent (Passenger Commercial), L.M.S.R. Mr. Bradbury was largely concerned with the work connected with the presentation of the railway companies' case for road powers in 1928, and in that year was appointed Road Transport Assistant to the General Superintendent (Passenger Commercial). On the creation of the Chief Commercial Manager's Department in 1932 he was made Assistant (General), responsible for road and air transport, trade advertising, commercial research and general sections of that department. In 1935 he became Assistant (Passenger) to Chief Commercial Manager, and, in 1938, Assistant Chief Commercial Manager (Passenger). In 1942 he was made Assistant Chief Commercial Manager (Outdoor), and in May, 1946, Chief Commercial Manager. From 1929 onwards Mr. Bradbury conducted negotiations for the acquisition of various passenger and goods road transport concerns, and from the time air powers were granted to the railway companies in 1929 he was closely concerned with the L.M.S.R. plans for the development of air transport, and was Chairman of the committee of experts appointed by the four

British Railways, entered the service of the North Eastern Railway in 1907, and held positions in the Chief Goods Manager's Office at York, and at West Hartlepool. He was commissioned in the Army in September, 1914, and, at the termination of the war, held the position of Assistant Quartermaster-General in Italy, with the rank of Lt.-Colonel. Shortly after demobilisation he was appointed Yardmaster, Blaydon, and in March, 1920, he became Dock Superintendent at Middlesbrough. He was made Assistant District Superintendent, Middlesbrough, L.N.E.R., in 1923. In 1927 he succeeded to the position of District Superintendent, Middlesbrough, and in 1928 was appointed District Goods Manager, Middlesbrough. In 1932 Mr. Rutter was appointed Portmaster at Grimsby, and in 1936 became Passenger Manager for the North Eastern Area of the L.N.E.R. He was appointed Superintendent, North Eastern Area, in March, 1940. He was Chairman of the R.C.H. Operating Superintendents' Conference for 1946.

The Minister of Civil Aviation has announced that Sir Harold Hartley has notified him of his wish to resign from the Chairmanship of British Overseas Airways Corporation on June 30, and that he has accepted the resignation with regret. Sir Miles Thomas, Deputy-Chairman of the

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Photo

Mr. J. Lorimer

District Goods & Passenger Manager, Edinburgh, L.N.E.R., and Scottish Region, 1947-49

*Mr. R. W. Rose*

Appointed District Commercial Superintendent, Edinburgh, Scottish Region

*Mr. James Port*

Appointed Works Accountant, Glasgow, Scottish Region

Mr. J. Lorimer, District Goods & Passenger Manager, Edinburgh (former L.N.E.R.), Scottish Region, British Railways, who is retiring, commenced his railway career in the St. Andrews Goods Department, North British Railway. Later he was transferred to the Passenger Department, and served at Innerleithen, and Galashiels, and in the Parcels Department at Edinburgh (Waverley). In 1911 he was appointed to the Office of the Superintendent of the Line, in which he continued to serve when the L.N.E.R. came into being in 1923. He was promoted Chief of the General Section of the Passenger Manager's Office in 1929, and became Chief Assistant to the Passenger Manager, Southern Scottish Area, in May, 1932. Mr. Lorimer was appointed Assistant Passenger Manager, Scottish Area, in July, 1943; District Goods & Passenger Manager, Dundee, in October, 1944; and to the corresponding post at Edinburgh, in November, 1947.

Mr. R. W. Rose, who, as recorded in our January 7 issue, has been appointed District Commercial Superintendent, Edinburgh, Scottish Region, British Railways, joined the North Eastern Railway in 1912. In 1915 he joined H.M. Forces; he was commissioned in the Machine Gun Corps, and subsequently transferred to the Royal Flying Corps. He held the rank of Captain (Flight-Commander) on demobilisation, and was awarded the Belgian Croix de Guerre. He returned to railway service in 1919, and was employed at various stations until he entered the Chief Goods Manager's Office, York, in the next year. In 1923 he became Secretary of the Light Work Posts Committee, dealing with employment of disabled ex-Servicemen, and in 1928 entered the Staff Section, Divisional General Manager's Office, York, L.N.E.R. Later he dealt with dock staff questions in the District Superintendent's Office, Hull, and in 1932 became Assistant Yardmaster, Hull West. In

1933 he entered the Superintendent's Office, York, as Salaried Staff Questions Clerk, and in 1936 became Assistant Goods Agent, Newcastle Forth, and, in 1937, Traffic Agent, Newcastle, New Bridge Street. Later in the same year he carried out all-line special inquiry work. In 1939 he was made Head of Traffic Section, Divisional General Manager's Office, York, and subsequently received appointments as Head of Staff Section, Engineer's Office, York (1940); Head of Works Section, Divisional General Manager's Office, York (1941); Assistant to Locomotive Running Superintendent, York (1943); and Assistant to Divisional General Manager, Edinburgh (1947). On January 1, 1948, Mr. Rose became Assistant to Chief Regional Officer, Scottish Region.

Mr. James Port, who has been appointed Works Accountant, Glasgow, Scottish Region, British Railways, joined

*Mr. W. Thomson*

Appointed Locomotive Assistant to Mechanical & Electrical Engineer, Scottish Region

*Mr. G. Thomson*

Appointed Outdoor Machinery & Electrical Assistant to Mechanical & Electrical Engineer, Scottish Region

*Mr. H. F. Mathews*

General Manager of Canadian Pacific Hotels, who has retired

the Caledonian Railway at St. Rollox workshops in 1920. A few years later he entered the Costing Department of the Works Accountant's Office, Glasgow, and subsequently was in charge of Foundries Accounts & Statistics. He took control of New Works & Statistics in 1942, and later became Book-keeper, and afterwards Head of the Accounts Section. In the 1914-18 war Mr. Port served in France with the Cameron Highlanders and in Mesopotamia with the Black Watch, and was mentioned in despatches.

Mr. W. Thomson, who, as recorded in our December 10 issue, has been appointed Locomotive Assistant to Mechanical & Electrical Engineer, Scottish Region, British Railways, commenced an apprenticeship at the St. Rollox Works of the Caledonian Railway in 1912. He was appointed Assistant Machine Shop Foreman, St. Rollox, L.M.S.R., in 1935, and Inspection Assistant (Locomotives), C.M.E. Department, St. Rollox Works, in 1937. Mr. Thomson was made Chief Inspector, Aircraft Repair Factory, Barassie, in 1941, and was appointed Assistant to Locomotives, C.M.E. Department, Northern Division, in 1945. During the 1914-18 war he served with H.M. Forces.

Mr. George Thomson, who, as recorded in our December 10 issue, has been appointed Outdoor Machinery & Electrical Assistant to the Mechanical & Electrical Engineer, Scottish Region, British Railways, served an apprenticeship with Fraser & Borthwick, Electrical Engineers, Glasgow, and was later appointed Assistant Electrical Engineer with the Pumperston Oil Company. He subsequently became Chief Electrical Engineer of the Morsby Coal Company, Whitehaven, and was responsible for the installation of electricity generating plant and other equipment. Mr. Thomson joined the Glasgow & South Western Railway at Kilmarnock in 1919 as Electrical Assistant to the Chief Mechanical Engineer. Consequent on the amalgamation of 1923 he was appointed Power & Lighting Assistant, Scottish Division, in the Electrical Engineer's Department of the L.M.S.R., and was concerned with the development and installation of coal conveyors, merchandise and coaling cranes and other equipment at the company's docks in Scotland. In 1939 he was appointed Outdoor Machinery & Electrical Assistant, Mechanical & Electrical Engineer's Department, Scottish Division, L.M.S.R.

Mr. H. F. Mathews, General Manager of Canadian Pacific Hotels, has retired, and is succeeded by Mr. R. A. Mackie. Mr. Mathews, whose total Canadian Pacific Railway service covers slightly over fifty years, was for fifteen years General Western Superintendent of the Sleeping, Dining & Parlour Car Department until in 1928 he was transferred to the Hotel Department, as General Manager of Western Hotels. He later served as General Manager of the coast-to-coast chain, which now numbers thirteen hotels, including the Chateau Frontenac at Quebec, Royal York at Toronto, Banff Springs Hotel in the Rockies and the Empress at Victoria, and six chalet-lodges. When the Chateau Frontenac was requisitioned in August, 1943, for a conference between Mr. Churchill, President Roosevelt, and Mr. Mackenzie King, Mr. Mathews handled all the secret preparations. This was repeated a little over a year later, at the second Quebec meeting in September, 1944.

Mr. Robert Morton Mitchell has been appointed Chief Executive Officer & Secretary of the Road Haulage Association.

Mr. Andrew Naesmith, because of pressure of work, has resigned from the Economic Planning Board.

The working party set up at the meeting of representatives of the Road Transport Executive and of local authorities at Newcastle on December 21, in connection with co-ordination of bus services, is constituted as follows:—Mr. G. Cardwell (Chairman) and Mr. W. Beckett, Members, Road Transport Executive; and Mr. A. T. Evans, Director & General Manager, United Automobile Services Limited. The party is at present engaged on preliminary work in London, and will be in Newcastle for local consultations for a time from January 24.

Mr. C. Furber, Commercial Superintendent, Western Region, British Railways, presided at a recent luncheon, attended by his headquarters officers, to mark the occasion of the appointment of Mr. W. M. Hitchcock (his General Assistant since January, 1948) to the post of Divisional Waterways Officer, North Eastern Division, Docks & Inland Waterways Executive, and the retirement of Mr. R. A. Sims (who has held the position of Claims & Salvage Agent since March, 1940). Mr. Furber paid tribute to the energy and capacity of both Mr. Hitchcock and Mr. Sims and thanked them for their assistance at all times. The other officers also referred to their sterling qualities.

At a recent ceremony in Edinburgh, recognition was shown by British Railways, Scottish Region, of outstanding initiative and devotion to duty displayed by twenty railwaymen when severe damage to lines was caused by floods last August. Silver watches were presented to nine men, and eleven received fountain pens; at a later date each will receive a suitably inscribed certificate. In making the presentations, Mr. T. F. Cameron, Chief Regional Officer, referred to the fact that there had been no casualties when the floods had occurred, and said that that, without doubt, had been due to the vigilance and initiative of the men on the spot.

SOUTH WALES DOCKS

As and from January 3, the following titles apply to officers of the Docks & Inland Waterways Executive in South Wales:—

Messrs. J. F. Arthur, Mechanical Engineer, South Wales Docks (East); D. E. Cameron, Mechanical Engineer, South Wales Docks (West); W. March, Assistant Mechanical Engineer, South Wales Docks; R. H. Edwards, Civil Engineer, South Wales Docks (East); I. Powell, Assistant Civil Engineer, South Wales Docks (East); T. R. Dovell, Civil Engineer, South Wales Docks (West); G. V. R. Morgan, Assistant Civil Engineer, South Wales Docks (West); V. N. Jolliffe, Electrical Engineer, South Wales Docks; E. R. Radway, Assistant Electrical Engineer, South Wales Docks; D. Hood, Dredging Superintendent, South Wales Docks; G. M. Thomas, Assistant to Dredging Superintendent, South Wales Docks; L. M. Sharp, Marine Engineer, South Wales Docks. South Wales Docks (East) cover Newport, Cardiff, Penarth and Barry Docks; and South Wales Docks (West) cover Swansea and Port Talbot together with Llanelli, Briton Ferry and Burry Port.

Mr. A. L. Castleman has been elected Master of the British Transport Officers' Guild for 1949.

We regret to record the death on January 7, at the age of 58, of Mr. H. M. Piper, C.B.E., Secretary of the British Employers' Confederation.

ROAD TRANSPORT EXECUTIVE

The Road Transport Executive announces the following appointments:—

Divisional Engineers (Freight): Scottish: Mr. James More (hitherto Automobile Engineer, Transport Department, City of Glasgow); North Western: Mr. P. F. Jones (hitherto Manager, Equipment Division, Specialloid Limited); Western: Mr. F. H. Kidd (hitherto Chief Engineer, Western Welsh Omnibus Co. Ltd.).

Divisional Staff & Welfare Officers (Freight): Mr. E. S. Williams, South Eastern; Mr. W. C. Webster, Eastern; and Mr. A. C. Stevenson, Midland.

Divisional Surveyor (Freight): Mr. R. W. Miller, South Western.

Divisional Traffic Officer (Freight): Mr. C. H. Jennens (Midland).

District Managers (Freight): Mr. J. McDonald, Dundee; Mr. D. D. Mynott, Colchester.

LONDON MIDLAND REGION STAFF CHANGES

The following staff changes are announced in the London Midland Region, British Railways:—

Mr. J. W. Kerr, Assistant Secretary, Euston, to be Treasurer, Euston.

Mr. R. B. Orange, Solicitor's Assistant (County Court), Euston, to be Chief Common Law Assistant, Euston.

Mr. E. H. Baker, District Motive Power Superintendent, Gorton, to be Assistant Divisional Motive Power Superintendent, Derby.

Mr. S. O. Screen, District Operating Superintendent, Crewe, to be District Operating Superintendent, Manchester (W).

Mr. F. Sutton, Divisional Controller (Freight Services), Office of Divisional Operating Superintendent, Crewe, to be District Operating Superintendent, Crewe.

BRITISH RAILWAYS OPERATING APPOINTMENTS

The appointment is announced as Operating Superintendent for the Eastern and North Eastern Regions of British Railways, of Mr. E. W. Rostern, previously Chief Officer (Eastern Group Operating), Railway Executive.

Mr. A. P. Hunter, previously Divisional Operating Superintendent, London Midland Region, Derby, has been appointed Divisional Operating Superintendent, York, in succession to Mr. E. M. Rutter, who retired at the end of last year from the position of Superintendent, North Eastern Region.

Mr. A. R. Dunbar, at present Operating Superintendent (Eastern Section), has been appointed Divisional Operating Superintendent (Eastern), Liverpool Street, and Mr. H. C. Johnson, at present Operating Superintendent (Western Section), becomes Divisional Operating Superintendent (Western), Liverpool Street.

The new organisation provides for one Operating Superintendent controlling throughout from London to Berwick, on the eastern side of England, and, in effect, provides a similar organisation to that already operating on the western side of England, covering the London Midland Region.

January 21, 1949

Ministry of Transport Accident Report

Conington North, British Railways, Eastern Region; March 1 and October 16, 1948

Lt.-Colonel E. Woodhouse, Inspecting Officer of Railways, Ministry of Transport, inquired into the accidents which occurred on March 1 and October 16, 1948, at Occupation Crossing No. 85, near Conington North, Eastern Region.

In the first case, during a dense fog, at about 7 a.m., ten min. after sunrise, a light engine travelling on the up line (north to south) ran down a covered lorry which was conveying ten German prisoners of war and was being driven by another prisoner. Three were killed outright and three more, including the driver, fatally injured. The others were seriously injured. First-aid was given by railway staff and others and medical assistance was obtained as rapidly as possible. The lorry belonged to the Huntingdon War Agricultural Committee and was completely wrecked; it was travelling from west to east. The prisoners were working on neighbouring farms.

In the second case, at about 5.26 p.m., a saloon motorcar was crossing from east to west, driven by a Peterborough solicitor, whose passenger had alighted to open the gates, when it was struck by an up empty coaching-stock train, travelling under clear signals at 50 m.p.h. The car driver was killed instantly and the vehicle wrecked. It was a very wet afternoon, with low cloud, and light was beginning to fail. There was a breeze from the south-west and visibility from the crossing northwards was worse than in the other direction.

THE SITE

There are three tracks, one a long siding, over the crossing, which is situated in level treeless fenland, now under cultivation; the railway is on a low embankment about 8 ft. high. The road intersects it almost at right angles and runs level with the land on each side, straight for $\frac{1}{2}$ mile towards the west and for $\frac{1}{4}$ mile towards the east. The railway fences are 223 ft. apart, with self-closing field gates, swinging away from the line and without locks. They are operated by road users and can be hooked back open. On each side, there is ample space for a vehicle to stand clear of the line inside the gates. There are penalty notices covering omission to shut and fasten the gates, warnings not to trespass and "Beware of the trains" notices saying "Look both up and down the line before you cross."

The embankment is clearly visible from both sides for a considerable distance, but a road user coming from the west may find that wagons on the siding partly obscure his view of trains until he has passed through the first gate. On the east, approaching trains can be seen without difficulty. On either side, just before reaching the outermost track there is a clear view along the line for almost a mile in each direction, though its straightness may make it difficult to judge at what speed a distant train is approaching.

The crossing has existed since the Great Northern Railway was built, a hundred years ago; the road over it is designated as an "Occupation Road" in the Book of Reference accompanying the plans deposited for the Great Northern Railway Act, 1846. Later, the road outside the G.N.R. boundaries was described as a public road, owned by the Huntingdon Rural District Council, in the Book of Reference prepared for the Great Northern

Railway Act, 1898, relating to a proposed widening. No portion of this took place over the public road, however, as the company already owned a sufficient width of land. Thus, the status of the roadway lying on railway property is unaltered; it remains an occupation roadway, not dedicated to the public, although the road outside the railway boundary on each side of the line is now public.

Until about 25 years ago, the road east of the crossing served three farms, having a total area of some 750 acres, but this was then increased by about 1,000 acres by the construction of a bridge over a drainage channel about a mile east. In 1928, the owners of this additional land were informed that the L.N.E.R. did not recognise that they had any right to use the crossing, but the matter was not pressed further.

A 48-hr. census a few days after the accident showed that between 6 a.m. on Thursday, March 4, and 6 a.m. on Saturday, March 6, 150 motor vehicles, 172 cyclists, and 34 pedestrians passed over the crossing; of the motor vehicles, 22 passed between 3 p.m. and 5 p.m. on March 4, and 21 between 4 p.m. and 6 p.m. on March 5.

Rail traffic amounts to about 200 trains daily, actual figures being 201 on Friday, February 27, and 193 on Tuesday, March 23; of these totals, 59 and 71 respectively were express passenger trains. Often 10 or 12 trains pass in an hr., and on March 23, 41 passed in four consecutive hr. during the afternoon, when road movement tends to be heaviest.

COURSE OF EVENTS

In the case of the accident on March 1, the light engine was driven by a passed fireman, supervised by a driver, and carried a guard and yard foreman; it was running tender first. They said they were not conversing and that a good lookout was being kept. Visibility was about 15 yd. They had to stop at Conington North box, 80 yd. south of the crossing, and on sighting the colour-light home signal 25 yd. north of it, were estimated to be travelling at 15 to 20 m.p.h. None of them saw the lorry before the collision.

The lorry was driven by a man who had been a driver in the German army and was most competent. Though not regularly employed over the route, he was familiar with the crossing. German drivers had no special instructions about occupation crossings and a British driver, who knew the neighbourhood well, had a narrow escape two days later, also in fog, when an express passed, which he had not heard, just after he got clear of the line. After the accident, instructions were issued that every camp lorry driver, or a man with him, was to descend and look along the line before crossing.

Colonel Woodhouse heard evidence given by two of the survivors, two months later, but their recollection was not very clear, possibly on account of their injuries, and it was impossible to establish whether the west gate was open when the lorry reached there, or whether it stopped just clear of the line before crossing. The signalman thought that the German drivers usually seemed more cautious than others. He often had seen one, or his companion, walk forward and glance along the line. On rare occasions, in fog, car and lorry

drivers would walk to the box and ask if a train was near.

Several witnesses testified that the gates often were left open, despite repeated requests to drivers. Keeping them locked ceased about 20 years ago, with the change of land ownership and bridging of the channel, which increased the road traffic. This now consists largely of lorries not locally owned.

A representative of the farmers interested gave details of the activities around, volume of traffic, and so on, and urged that something should be done to make the crossing safer. After an accident in 1947, he had suggested that some form of signalling apparatus should be provided. The marshalling yard, built in the war, had made the view of down trains poorer and some parents felt anxiety for their children who had to traverse the crossing. The status of the crossing, the difficulties affecting operation of signalling apparatus, and possibility of a false sense of security being obtained therefrom, had to be explained to him.

Concerning the second accident, on October 16, a down express passed a min. before and the up train, which struck the car, passed Holme, a mile to the north, about that time. The signalman proceeded to set the road for a down freight to leave the siding and to follow the express. He said that the smoke and steam left by the express cleared slowly, beating down and drifting away along the ground towards the east, the direction from which the car approached; otherwise, between trains and when their smoke had disappeared, visibility was reasonably good for a dull wet day.

The driver of the up train, approaching at 50 m.p.h., did not notice the car until it was practically on the line at about 20 yd. from the engine. The only eye-witness was the car driver's companion, who alighted just after the express passed, to open the east gate. They both saw the waiting freight train and wondered if it would start before they crossed. He could see that train's brake van, 580 yd. away, but it was mistier towards the north. Visibility there became worse after he alighted. He neither saw, nor heard a train when opening the gate, and the car drove towards the line. He then saw the train and shouted, but doubted if he was heard. He hoped the car would get clear in time, but it just failed to. From the usual practice he and his friend always followed there, he concluded his friend was satisfied that it was safe to cross. He felt almost certain the off-side window was down and thought it unlikely that the engine could have stalled, or faltered unexpectedly.

INSPECTING OFFICER'S CONCLUSIONS

The first accident was due partly to misadventure, and the second entirely so. The first might have been avoided had the light-engine driver whistled, but Colonel Woodhouse is disinclined to criticise him, as there are no instructions treating this crossing differently from others. The most that can be said, is that as the engineman knew it well, and presumably the extent to which it was used, it would have been more prudent to whistle when visibility was so poor. Whether the gates had been left open or shut, is not material, taking note of bad visibility and their distance from the line. If the German driver drove on to the line without a preliminary stop, as was suggested, he was acting incautiously. Had he waited clear, listening for the approach of a train, stopping his engine, if necessary, the

accident might have been avoided. Nevertheless, a road vehicle driver using an unguarded crossing in dense fog, is in an awkward position, especially on a busy line. The real point at issue is the risk at a crossing, where conditions have materially altered since it was constructed.

In the case of the second accident, it seems likely that the car driver was anxious to get across before the down freight train, liable to start at any moment, and that this diverted his attention from the possibility of an up train coming and from temporary worsening of visibility northwards. The fact that he could not see the indications of the up home (colour light), but could see those of the down homes (semaphores), may have contributed.

REMARKS

Colonel Woodhouse deals at some length with the general problem of the occupation and accommodation crossing and refers to the accidents at Formby and Wormley in 1934, and the more serious one at Hilgay, in 1939, where a train became derailed, with loss of life. These crossings were being used to all intents and purposes as public ones and doubtless were so regarded by road users, unacquainted with the niceties of legal definitions. The remarks in the reports on those accidents apply equally to the present case.

The position now is that unless arrangements have been made to dedicate the roadway over such a crossing to the public, the British Transport Commission is not under any legal obligation to treat it otherwise than as an occupation crossing, users of which cross at their own risk. A remark by Colonel Trench on the Wormley accident usefully may be quoted:—"I also suggest, though I am afraid it is too late to be of value in many cases, that local and road authorities should not adopt as public roads any occupation roads which approach a railway level crossing, until they have come to an agreement with the railway company as to the future status of the crossing, and the precautions which are necessary to permit of public user in safety." In some cases, however, where increased road traffic is not strictly "public," but has been caused by the activities of an undertaking established on land only accessible by an occupation crossing, the company has provided gatekeepers or installed warning apparatus by arrangement with the firm concerned.

Particulars collected in 1937 showed that, out of 22,656 such crossings, 746 carried road traffic greatly differing in volume, or character, or both, from that for which they were originally provided; also that 224 of these had become in substance, though not legally, public crossings. On the subject of dedication to the public of the roadway over the crossings, it appeared that in 388 of the 746 cases, conversion to the public road type, that is with gates arranged to close alternately across road and rail, demanded early consideration, unless bridging or diversion of the road could be justified economically.

It is reasonable to assume, too, that subsequent wartime developments such as government factories, service installations, and intensified agriculture, materially have increased or altered the traffic at other crossings. Extension and improvement of the Fenland roads near Hilgay crossing have resulted in a growth of the traffic there, but no improvement has been made yet.

But for the war, it is possible that the interest aroused by accidents would have led to measures for greater safety, with any legislation needed to give effect to them. The present case has revived the

question, and the British Transport Commission is considering the general issue afresh, at the request of the Ministry. As local conditions vary widely, a solution capable of general application hardly is practicable; each case will have to be judged on its merits.

Conditions at a busy or dangerous occupation crossing may be improved in a variety of ways. It may be replaced by a bridge, or traffic be diverted to an existing bridge or public level crossing. It may be dedicated to the public and an attendant provided to work the gates and signals interlocked with them, unless this can be done from an adjacent signal-box, with gates of the standard public crossing type if conditions are suitable. Or, without alteration of its status, some form of warning apparatus or other safety equipment may be provided.

The capital cost of a bridge is bound to be considerable, as is the recurrent cost of dedication with the provision of an attendant. Whatever method is adopted, the financial question involved and the equitable distribution between the interested parties of the expenditure, undoubtedly is the main obstacle to be overcome. As a rule, the railway companies (or British Transport Commission) in no way have been responsible for developments, or activities, which have placed an additional burden on crossings adequate for their original purpose. Consequently, they have held that the cost of alterations needed to protect road and rail traffic against undue risks ought to be borne by those creating them. Nevertheless, it must not be overlooked that with the passage of time there has been a change in the type of vehicle using all occupation crossings, which has increased the risk to rail traffic, for a collision with a lorry, tractor, or motorcar is more likely to be followed by derailment, than one with horse-drawn carts and wagons.

With retention of occupation status, there is a choice of three forms of equipment to provide greater safety, namely:—Gates of the lifting type worked from a signal-box, if there is one near enough; some form of signalling device to give warning of the approach of a train; a telephone to the nearest signal-box, so that users of the crossing can enquire if it is safe to cross.

Lifting barriers are widely used abroad, and can be worked manually over greater distances than the ordinary type of gate. They should be satisfactory if the signalman has a reasonably good view of the crossing, and if they are fixed far enough from the line to provide a sufficient safety bay on each side of it, to accommodate a vehicle caught between them when they are lowered. Communication from the crossing to the box, to ask for the barriers to be raised, would be needed, as well as some audible or visual device at the crossing, to indicate when they are about to be lowered.

After an accident, the provision of road signalling apparatus frequently is urged; this arrangement often is used abroad, but has its limitations. A bell, or a light, operated by an approaching train does not meet the case, for failure of current or of the circuit would lead to a false sense of security. The apparatus must be arranged to fail on the side of safety; this is the more necessary, as the present legal situation is that although in the absence of warning apparatus, users of the crossings are responsible for their own safety, yet if such apparatus is provided to improve conditions, but fails to operate on any occasion, liability for any resulting

accident is transferred from the users of the crossings to the owners of the railway. As suggested by Sir Alan Mount in his report on the Hilgay accident, relief from this liability, provided the failure can be shown to be fortuitous, might well be considered in any legislation dealing with occupation crossings.

Any form of signalling apparatus arranged to tell the road user to stop, such as the familiar traffic-light signal, would be unacceptable; a failure would cause display of the stop indication with no train near, so bringing the apparatus into disrepute and introducing the risk that a driver once needlessly delayed would disregard it when working properly. Hence the instructions given would have to be "No Train Approaching" displayed by an energised circuit, and "Exercise Special Caution—Train Approaching," appearing when the circuit is de-energised. The latter indication can be shown automatically by an approaching train, when a treadle actuated by it breaks a circuit, or a track circuit is occupied, or equally well could be controlled by the block telegraph circuits.

Though equipment of this nature, in the form of an electrically-worked movable sign, has been installed at some industrial crossings in this country, it has the defect that if two trains are approaching in opposite directions, a road user may think it safe to cross as soon as the first of them has passed, regarding the warning given by the apparatus as applying to that train only.

The provision of an unattended telephone is more suitable for occupation crossings used mainly, or exclusively, for their original purpose, and by relatively few individuals, such as herdsmen, or other farm hands, who are familiar with the routine. Elsewhere, it is doubtful if many road users would take the trouble to telephone in clear weather, especially if there is a good view along the line, as at Conington, though some might do so after dark, or more probably in fog.

But there is always a risk of telephoned instructions being misunderstood, leading to a driver crossing the line after the passage of one train though told to wait for two, and a signalman might well be unable to attract the attention of a driver to alter the instructions given to him, for example, if a second train approaches after he has been told to wait for one only to pass. There might also be a tendency to allow an undue margin before the passage of trains, or at any rate one appearing needlessly long, during which drivers would be advised not to cross. Although a useful precaution against a sluggish start by a car or lorry, this easily might lead to warnings being disregarded, or treated lightly.

APPLICABILITY TO CONINGTON

Colonel Woodhouse dwells on the problem as it particularly affects the Conington crossing, which it would not be practicable to close. There is no bridge near and to construct one would be costly and would not be easy. To connect the area to the Holme Station crossing would entail appreciable road building, construction of a drainage channel and a bridge over it also would increase the length of road users' journeys.

It is unfortunate that the Conington North box was not placed at the crossing, as first proposed, as control of it then would have been easy. Dedication to the public would involve a gatekeeper, probably also living accommodation, or replacement of the box by one at the crossing.

Lifting barriers could be worked from the box, but that would depend on its being always open; at present it is closed for 24 hrs. in each week. The south box is about a mile away, probably too far to work barriers.

Rail speeds vary from 15 to 20 m.p.h. for mineral trains, to 80 m.p.h. for expresses, and for the expresses a warning would need giving at a considerable distance. View along the line is unusually good and it is hardly possible to estimate—at night impossible—the speed of a distant train. A road user, who has been warned and waits for what seems an inordinate time for a slow train, may on another occasion risk crossing in front of a fast one, at no great distance, acting as he does today, despite the warning.

A telephone could be switched through to other signal boxes as required, and if conspicuously labelled, might improve conditions to some extent, depending on the

use made of it; but an unattended telephone cannot be regarded as an adequate remedy for risks at a crossing used by the public at large.

RECOMMENDATION

The difficulties to be overcome provide no reason for continuing a *laissez faire* policy. Conditions elsewhere may be worse, but those at Conington are highly unsatisfactory and indeed dangerous after dark, or in poor visibility. The census shows that the crossing is far busier than many public ones over branch lines of small importance, where speeds are not high and train service is infrequent, which, nevertheless, have gatekeepers and often have interlocked signals. The safety value of the Conington gates is negligible. No doubt they and others are frequently left open. It is unreasonable to expect someone who has propped them open, to stop and close them if he knows he is to drive

back over the spot shortly, or if he sees another vehicle approaching.

This crossing requires a much higher standard of protection. If the cost of dedicating to the public—the most satisfactory arrangement—is regarded as unjustifiable, lifting barriers and so on, worked from Conington North box in its present position, would be a cheaper but effective remedy, deserving consideration.

Meanwhile, risks can be lessened by stationing an attendant, in touch by telephone with the nearest open signal box; at any rate during farm working hours. Although this part-time protection has its disadvantages, Colonel Woodhouse recommends that the Region be asked to provide it, as a temporary expedient.

The possibility of re-aligning the road and moving the crossing close to the box also is being investigated as an alternative to the methods of permanent improvement already suggested.

Trans-Zambesia Railway Co. Ltd.

The annual general meeting of the Trans-Zambesia Railway Co. Ltd. was held in London on December 30, 1948, the Hon. M. W. Elphinstone presiding in the unavoidable absence of Mr. Vivian L. Oury, the Chairman.

The Chairman's statement, which was presented to the meeting, showed that receipts for the year ended December 31, 1947, were £341,230, compared with £320,780 in the previous year. Expenditure was £282,320, as against £242,536. The surplus of receipts over expenditure was £58,910, compared with £78,244 in 1946; the heavy increase in expenditure resulted from the increased cost of materials and wages.

After meeting the service of the advances from the Nyasaland Government, against which £960,000 3½ per cent. first debenture stock was to be issued, £12,371 was available for interest on the agreed amount of £1,500,000 in respect of which 5 per cent. income debenture stock was to be issued.

In May, 1948, the Portuguese Government published the decree authorising the issue of the 3½ per cent. first debenture stock and the 5 per cent. income debenture stock, and accordingly these stocks were issued.

The tonnage of goods carried during the year was 190,283, compared with 191,122 in 1946. Passengers totalled 103,053, as against 87,640. The volume of traffic in net ton-miles increased from 13,669,272 in 1939 to 27,780,780 in 1947.

Bogie wagons built by the Gregg Car Company are being erected in Africa, but delivery of the eleven new locomotives ordered by the company in conjunction with the Nyasaland Railways is not due to begin until the middle of 1949.

It is expected that rail communication to the coal mine at Moatize, from which railhead on the Tete Railway is 66 miles distant, will be established by July, 1949. It will give the mine direct access via the Tete Railway, the Zambesia Bridge, and the company's line, to the port of Beira, and will enable the Companhia Carbonífera de Moçambique to proceed with its plan to expand its coal output.

Relations with Government and Government officers continue to be most cordial. The willing assistance and co-operation of the Tete Railway and Beira Railway are acknowledged. The Chairman wished to place on record appreciation of the services rendered by the General Manager

(Mr. R. C. Bucquet) and the staff in Africa and London.

At the meeting, Mr. Elphinstone referred to the taking over by the Portuguese Government on January 1, 1949, of the works and installations and operations of the Port of Beira and to the announcement by the Beira Railway Co. Ltd. that, subject to the approval of their shareholders, an agreement had been made for the sale to the Portuguese Government of its undertaking in Africa, with effect from April, 1949.

The reports and accounts were adopted unanimously.

Institute of Transport : Council's Annual Report

In the course of the report of the council of the Institute of Transport on the work of the Institute for the year ended September 30, 1948, it is recorded that there were on the roll at that date 2,510 corporate members and 5,601 non-corporate members, a total of 8,111, compared with 7,650 at September 30, 1947.

During the year the King conferred honours on 21 members of the Institute. In recognition of outstanding services to the Institute, in connection with the acquisition of new premises, the council had pleasure in directing that Honorary Membership be conferred on Sir Frederick Handley Page, Past-President. The council accepted a gavel and stand, presented by Mr. G. S. Szlumper, a Past-President, to commemorate an aggregate of eighteen years service on the council, and the notice case in the Entrance Hall, presented by Modern Transport in memory of Frederick Charles Coleman.

The council expresses its warmest thanks to the officers and committees of the centres abroad, sections, sub-sections, groups and graduate and student societies, and to the honorary corresponding members, for their valued services to the Institute during the year.

The council records that the British Transport Commission agreed to continue for 1949 the awards formerly given by the Railway Companies' Association; and it accepted an offer by the British Electric Traction Co. Ltd. to donate an award of £100 for presentation by the council to the author of an original paper which, in the

opinion of the council, makes an outstanding practical contribution to the advancement of road passenger transport operation or administration.

Questions in Parliament

Buenos Aires Transport Corporation

Mr. William Teeling (Brighton—C.) on December 6 asked the Secretary of State for Foreign Affairs what had been the result of the British Ambassador's representations to the Argentine Government concerning compensation to be paid to the British shareholders of the Buenos Aires Transport Corporation; and what was the present position concerning the assets of that Corporation owned by British capital.

Major C. P. Mayhew: No reply has yet been received to the representations which have been made to the Argentine Government concerning the liquidation of the Buenos Aires Transport Corporation. The terms on which the liquidation is to be put into effect have not yet been fully disclosed.

Mr. Teeling: Can the Minister say how long it is since the Ambassador made this application?

Major Mayhew: I cannot say the exact date. Our Embassy has been asked to telegraph as soon as new information is available.

Sir Patrick Hannon (Birmingham, Moseley—C.): Does the Under-Secretary realise that in this case serious losses will probably be sustained by shareholders in this Corporation in this country, and what effort has been made by the Government to ensure fair play for them in a final settlement?

Major Mayhew: We shall certainly try to get fair play.

WINTER VISITORS TO BRITAIN.—Monthly statistics issued by the Tourist Division of the British Tourist & Holidays Board show that during November last 18,890 visitors arrived in this country from overseas. This is a 5 per cent. increase on the figure for the corresponding month of 1947. The number of visitors for November was up by 19 per cent. on last year. For the first time, the statistics show the proportions of visitors arriving by sea and air, and for the month under review these were 74 per cent. and 26 per cent. respectively.

Some Transport Problems Examined*

Mr. Roland Bird discusses British transport organisation from the viewpoint of the economist

The basic principle governing the integration of transport is to provide enough transport for the community at the lowest real cost per unit of service. A technically efficient transport system may become uneconomic if the demand for its services falls by half. The conception is the organisation as a single service, an organisation and a system of charges designed to encourage traffic to use the form of transport best suited to its particular needs. That is the case for presuming that behind the machinery laid down in the Transport Act of 1947 there lies a body of general principles which would receive free democratic consent.

Each stage in the development of the nationalisation of transport may be subjected to the relatively simple test whether, on the face of it, the consumer's interest is the first consideration. What has to be done before the underlying case for common ownership can be satisfied in terms of practical results is concerned largely with costs and charges.

Already some lessons have been learned in the field of organisation during the past year. There is much to be said for a form of organisation in which the technical expert is given an unequivocal area of decision. To enable the functional principle to work at its best, it ought to be given free rein strictly within its specific technical field.

FUNCTIONS OF MANAGEMENT

Under the old organisation of the railways the definition of the area of decision was a function of management. The general manager had the duty of deciding between various technical claims and demands, of making his own assessment of cases submitted to him, and of originating new proposals for the technical officers to work out or disprove. The general manager, in turn, was subject to the authority of a board of directors, who were the final arbiters of, and ultimately responsible for, policy and planning.

There are two functions of management. One is to hold the ring between the technical officers, because it is not their job to decide which among the competing claims on limited resources of capital and labour should have first priority and which must be deferred. The other is to lay down the broadest lines of policy and long term development. In shorthand descriptions, the first is the job of general management, the second is a dictatorial responsibility, though the functions are not necessarily coterminous with the offices of general manager and director.

PATTERNS OF MANAGEMENT

This first function has been given too little emphasis in the Railway Executive and too much emphasis in the Transport Commission. The second function of directorial responsibility which should be the primary concern of the Commission is in some danger of being swamped by the pressing cares of day-to-day business. From the start it was obvious that a co-ordinated system of transport would call for the exercise of a higher art of management than has ever been required in the history of large-scale organisations.

* Abstract of a paper, "An Economist Looks at British Transport," read by Mr. Roland Bird, Deputy Editor, *The Economist*, before the Institute of Transport on January 17.

Of precedents, there was the pattern created by the London Midland & Scottish Railway, with an Executive Committee, on which Vice-Presidents sat under the chairmanship of the President. Each Vice-President was not concerned with the day-to-day working of the departments for which he was the custodian and mentor on the Committee.

London Transport, the second precedent, worked, not because of any exclusive merits in an organisation which made no formal provision either for general management or technical direction, but because of the special personal abilities of the two men who were its first chairman and vice-chairman—the late Lord Ashfield and the late Mr. Frank Pick.

The experience of the L.M.S.R. suggests it was difficult enough to supply the essential quality of management without going too far towards central control and decision at the top on details which might more conveniently have been settled at a lower level. Yet I have still to be convinced that the choice of functional members of the Railway Executive is the right one.

AUTHORITY OF C.R.O.S

The lack of clear authority entrusted with the Chief Regional Officers, who have the task of local management and the co-ordination of the work of the departmental officers has not produced, perhaps, any seriously disadvantageous results so far. To what extent is that due to the momentum of the railway organisations themselves, and to the exercise of patience and goodwill by the Chief Regional Officers themselves? The system at least admits the possibility of divided authority in the Regions, and at the Executive itself, the broader questions of policy fall on the heavily-burdened shoulders of the Chairman and his deputy.

In the volume and quality of service which is to be provided for the public, the work of the Executive most closely touches the responsibilities of the Commission. It is the task of the Executive to provide adequate rail service, but it does so as agent of the Commission.

I am sceptical about suggestions that the Railway Executive has no *raison d'être*. It is argued that it is unnecessary to interpose the Executive between the Commission and the Regional organisations, and that the cost of the Executive is unlikely to be balanced by the economies which it may achieve.

The arrangements made in the Executive for technical and functional management may be far from perfect, but they would be ten times more confused if transferred to the Commission. It is not the Commission's concern, for instance, to decide questions of locomotive policy or forecast the requirements of railway wagons.

The real justification of the 1947 Act—and it has yet to be proved—is that it may be the means of reducing appreciably the real cost of providing a transport system adequate for the needs of the country. Until costs have been reduced, the prospect of lower charges to the public must remain remote. Changes will not be achieved in less than five years. For the co-ordination of all forms of transport it might be safer to allow at least double that time.

What answer is to be found to the

thoroughly disappointing results of the first year of nationalised transport—or, more accurately, nationalised railways? Clearly the Commission could not possibly acquiesce in the proposition that the railways can never be made to pay their way, one year with another.

FARE ADJUSTMENTS

Because the Commission is obliged to meet its revenue charges, it will be under pressure to make empirical adjustments in fares and charges in the hope of meeting that obligation, but without any certainty that the adjustments are necessarily those which would conform with the basic purposes of the Act—adequate and cheap service. The suggestion that road passenger fares should be raised to the level of rail fares is as unsound as that rail fares should be reduced to the level of road fares.

One of the steps which made the Transport Bill palatable was the withdrawal of restrictions on the use of vehicles operated under "C" licence. The trader's vehicle and private car provide the only effective spur to the public transport organisation. I would rather have that spur, even if it meant that the effective loading of the public transport service was somewhat below the optimum.

The answer to the fear that traders will dump their uneconomic loads on the public transport system is ultimately to be found in a system of charges which vies with the cost of private transport yet discourages dumping. If public transport cannot meet this test, so much the worse for it. I cannot accept any restriction on ways of doing a thing cheaper to maintain existence ways of doing it dearer.

Members of the public transport staffs have a clear right to participate in the ultimate benefits of the Act, but any attempt to anticipate those benefits will jeopardise their very achievement, because the increase in costs will have to be met from increased charges, instead of being earned from increased economies.

I never thought several months before the Transport Bill that co-ordination of transport could be accepted as a self-evident success, but I regarded the experiment, in all the circumstances, as being economically promising as well as politically inescapable.

Success is no nearer today, for events are giving this gigantic new infant some rough handling even before it is weaned. That must be a challenge; submission would mean the end of all hope that inland transport can be made cheaper and more efficient.

I believe that a public transport system devoted to those aims will enjoy wide public goodwill, but it will be easy for it to get lost in its sheer bigness, to miss the best form of management, to succumb to the pressure to balance its revenues by raising its charges because of a defeated view that its costs are more or less constant. To mention these possibilities is not to wish the Commission ill. The consequences of this experiment in public transport are so important for the future well-being of the British economy that only constructive comment is permissible.

SIR CYRIL HURCOMB'S REPLY

Sir Cyril Hurcomb, Chairman of the British Transport Commission and past President of the Institute, in thanking Mr. Roland Bird for his paper, said that while he would not acquiesce in the proposition that "the railways can never be made to pay their way, one year with another," the fact that the Commission's businesses were declared to form one undertaking

surely implied that the profits of one part, or branch of that undertaking might from time to time be applied in support of the overhead charges of another part, or branch, the maintenance of which in a state of efficiency was necessary to the network of facilities? How, and to what extent, that could and should be done was another matter, but Mr. Bird's recoil from the mere idea was more horror-stricken than his own. He did agree with Mr. Bird as to the importance of securing the maximum economy and efficiency in the use of each form of transport.

As to "C" licences, he appreciated the principles which had led Mr. Bird to his view. He could only repeat that if, for the sake of some immediate or temporary individual advantage—perhaps in some cases only an apparent advantage, if a true examination of costs were carried out—resort to private transport was on too large a scale, industry as a whole could not expect public transport at as low a price as might otherwise be possible. But this was not a matter which the Commission approached in a mood of despair or in a threatening attitude; his instinct was to accept the challenge of the "C" licence.

Sir Cyril said he had no doubt that the Commission had been right in introducing a substantial functional element into the Executives, and equally right in excluding that element entirely from the Commission. There might be some risk that functional members of an Executive would take too specialised a view of their place in the structure and might fail to feel their collective responsibility, in spite of the guiding hand of their Chairman. For his own part, he was not much afraid of the risk, partly because he believed that the men chosen for these posts were, and would be, big enough to resist such tendencies.

Then it was suggested that the Commission might become too much cluttered up by the pressing cares of day-to-day business. Except so far as current incidents may throw light on general tendencies, or lead to general criticisms, or attract the attention of Parliament or Consultative Committees of Users, it heard, and would hear, nothing about day-to-day business. It was true that in the initial stages many matters which, in smaller organisations, presented no problems, assumed for the moment general aspects of principle and had to be settled as such, especially as between Executives.

Railway problems had bulked largest in the year. A small variation in railway receipts or expenditure could have the most far-reaching effects on our finances. Anything done affecting 600,000 railway men and women of so many diverse grades and occupations could not be without serious reactions elsewhere. Plans of technical development, the type of future motive power, the size and character of the wagon stock, could involve tens of millions of expenditure, and perhaps cast the whole pattern of the transport service into a set mould for another generation to come. These were hardly matters in which the Commission could profess itself disinterested. Indeed, people sometimes talked about policy without remembering sufficiently that policy had to be about something. Was it not possible that those who had to settle issues of policy were more likely to settle them swiftly and sensibly if they were in touch with the conditions out of which those issues arose and with the men who were seeking to formulate them? He had always held that no one should be asked to take the maximum responsibility on the minimum of information. But this was something very different.

from any concern in day-to-day, week-to-week or month-to-month operation or management.

The size of the Commission's staff was perhaps the best proof that it was not unduly enlarging its functions. All told, including messengers, typists and clerks, it was 160, of whom nearly 100 were clerks, typists and messengers. One-third of the total staff was in the financial and statistical department. The Commission was not attempting to concern itself with operation, management or technical control.

Notes and News

Draughtsman Required.—A draughtsman with knowledge of rolling stock is required by a firm in North Midlands. See Official Notices on page 83.

Railway Sidings Designer Draughtsman Required.—Imperial Chemical Industries Limited has a vacancy at its Wilton Works, Tees-side, for a railway sidings designer draughtsman. See Official Notices on page 83.

Accounting Assistant Required.—Applications from qualified candidates are invited for the post of accounting assistant by the East African Railways & Harbours for one tour of 24 to 48 months in the first instance. See Official Notices on page 83.

Institution of Civil Engineers.—A meeting of the Institution of Civil Engineers, Great George Street, Westminster, London, S.W.1, will be held at 5.30 p.m. on Tuesday, February 1. Papers will be read by Mr. A. M. Sims on: "The Design and Strength of Standard Flat-Footed Rail and Fishplate Sections," and Mr. N. W. Swinnerton on: "Practical Considerations in Regard to the Design of Flat-Bottom Rail Track."

Films Division for British Transport Commission.—The British Transport Commission has announced that it is about to establish a Films Division in the existing Department of Publicity which will provide a common service for the production of public and industrial relations films and other visual material on behalf of the Commission and its Executives. Some of these will be made by independent contractors and others by a Transport Film Unit to be set up by the new Films Division. The British Transport Commission is advertising for a Films Officer to organise the new Division at a commencing salary of £1,250 a year.

Chairman of B.T.C. Visits London Transport Undertakings.—Lord Latham, Chairman of the London Transport Executive, on January 14 conducted Sir Cyril Hurcomb, Chairman of the British Transport Commission, on a tour of inspection of the Executive's new railway depot at Ruislip. They were accompanied by Mr. A. B. E. Valentine, a Member of the Executive; Mr. W. S. Graff Baker, Chief Mechanical Engineer (Railways); Mr. F. G. Maxwell, Operating Manager (Railways); and Mr. H. T. Hutchings, General Superintendent (Traffic), Railways. On the return journey the handling of peak-hour traffic at Bond Street Station was studied.

Decision on Railway Wage Negotiations.—Mr. George Isaacs, Minister of Labour, has decided to refer the claim of most of the 450,000 members of the N.U.R. for an increase of 12s. 6d. a week to existing negotiating machinery. He has taken this step at the suggestion of the National Arbitration Tribunal. As no

machinery exists within the industry for workers employed by the Hotels Executive their case will be heard by the National Arbitration Tribunal. It was also announced on January 14 that the independent arbitration tribunal appointed to consider the claim of 50,000 London Transport workers for payment of time-and-a-half on Saturday afternoons will hear a similar claim for provincial busmen.

Crown Agents for the Colonies.—An engineering assistant, civil, is required by the Crown Agents for the Colonies for its London office. See Official Notices on page 83.

Assistant Traffic Superintendent Required.—Applications from qualified candidates are invited for the post of assistant traffic superintendent by the railway department of the Federation of Malaya for one tour of three years with prospects of permanency. See Official Notices on page 83.

London Transport Dramatic Club.—At the Cripplegate Theatre, London, E.C.1, last week, the London Transport Dramatic Club presented the well-known play "Arsenic and Old Lace," by Joseph Kesselring. The production, by Gladys Burchell, compared favourably with the West End presentation, with particularly fine performances by Madge Bradshaw and Gwen Gibbs as the old ladies who dole out the poisoned wine. Incidental music was provided by the London Transport Orchestra.

Lancashire & Yorkshire Waggon Co. Ltd.—The directors of the Lancashire & Yorkshire Waggon Co. Ltd. have decided to proceed with a repayment of capital. An extraordinary general meeting is called for January 24 to consider a resolution which provides for a repayment of £7 10s. per share, so reducing the capital to £25,000 in 10,000 shares of 50s. each. The capital is to be increased to its former amount of £100,000 by the creation of 30,000 new shares of 50s. each. There is no present intention of issuing any new shares.

Visit to Tilbury Docks.—Some 50 members of British Railways, Southern Region, Lecture & Debating Society took part in a visit to Tilbury docks on Saturday, January 15. For the purpose of inspecting the Orient Line ss. *Orion*, which was in course of preparation for its next voyage, the party was escorted through the first class and tourist accommodation. During the course of the inspection, members were shown a variety of cabins, as well as lounges, dining saloons, galleys, and the children's playroom.

Diversion of East Coast Trains.—Reference to the diversion of East Coast trains via Lincoln was made in our December 10, 1948, issue and because of further engineering operations on both the up and down main lines, at Haugham, north of Grantham, which were commenced on Sunday, January 16, more diversions are being made. Weather and other circumstances permitting, on each Sunday until February 20, all trains booked to pass this point on these days between 3 a.m. and 8 p.m., are being diverted via Lincoln. As a result of this diversion a number of trains from Kings Cross to the north run 20 to 40 min. later from certain intermediate stations and southbound trains run as booked to York, Doncaster, or Retford, and arrive at Kings Cross 10 to 45 min. later. Because certain trains booked to call at Newark are unable to do so, a bus service between Grantham

OFFICIAL NOTICES

None of the vacancies on this page relates to a man between the ages of 18 and 50, inclusive, or a woman between the ages of 18 and 40, inclusive, unless he, or she, is excepted from the provisions of the Control of Engagement Order, 1947, or the vacancy is for employment excepted from the provisions of that Order.

Crown Agents for the Colonies

APPLICATIONS from qualified candidates are invited for the following post:—**ACCOUNTING ASSISTANT required by the East African Railways and Harbours for the Accounts Department for service in Tanganyika for one tour of 24 to 48 months in the first instance.** Salary according to qualifications, experience, and war service in scale £590, rising to £690 a year. Free passages and quarters. Provident fund terms. £30 outfit allowance. Candidates not over 30, must possess a General Schools Certificate and have had good general clerical experience in the Traffic Department at smaller stations on a Home Railway. Apply at once by letter, stating age, whether married or single, and full particulars of qualifications and experience, and mentioning this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/21645/3E on both letter and envelope.

IMPERIAL CHEMICAL INDUSTRIES LIMITED have a vacancy for a Railway Sidings Designer Draughtsman in their Wilton Works, a large new factory being constructed on Tees-side. Applicants should be experienced in preparation of schemes, drawings, and bills of quantities for large-scale factory railway sidings. Shop and field experience, including surveying, are essential, and general civil engineering knowledge an advantage.

The advertisement is published by permission of the Ministry of Labour and National Service under the Control of Engagement Order, 1947.

Applications giving full details and quoting advertisement reference No. ICI/X/48/e should be addressed to the PERSONNEL MANAGER, IMPERIAL CHEMICAL INDUSTRIES LIMITED, Wilton Works, P.O. Box 54, Middlesbrough.

TRANSPORT ADMINISTRATION IN TROPICAL DEPENDENCIES. By George V. O. Bulkeley, C.B.E., M.I.Mech.E. With chapters on Finance, Accounting and Statistical Method. In collaboration with Ernest J. Smith, F.C.I.S., formerly Chief Accountant, Nigerian Government Railway. 190 pages Medium 8vo. Full cloth. Price 20s. By post 20s. 6d.

THE EVOLUTION OF RAILWAYS. Second edition, revised and enlarged. By Charles E. Lee. Traces the germ of railways back to Babylonian times. Cloth. 8½ in. by 5½ in. 72 pp. Illustrated. 6s. By post 6s. 4d.

and Newark and a shuttle rail service between Newark and Retford, is being operated to connect with them.

Central Argentine Railway Change of Address.—The office of the Central Argentine Railway Limited is now situated at River Plate House, 10 & 11, Finsbury Circus, London, E.C.2 (telephone: Monarch 9496).

Golborne Stations Renamed.—The London Midland Region Station at Golborne, between Warrington and Wigan, was renamed Golborne (South) on January 1. At the same time, the former Eastern Region Station at Golborne, between Glazebrook and St. Helens, was renamed Golborne (North).

Canadian Pacific Orders.—The Canadian Pacific Railway during November, 1948, received 116 covered hopper wagons from the National Steel Car Company, Hamilton, Ont., completing an order for 200 of this type. During the same period, the Canadian Car & Foundry Company, Montreal, supplied 22 baggage-express cars to complete an order for 25, and the Montreal Locomotive Works delivered the fourth 1,000-h.p. diesel-electric switcher of an order of 20.

Railway Students' Association.—Lord Rusholme, Member of the British Transport Commission, occupied the Chair at a meeting of the Railway Students' Association, London School of Economics & Political Science, on January 12, in the absence of Sir Cyril Hurcomb, Chairman

ENGINEERING ASSISTANT—CIVIL required by the Crown Agents for the Colonies for their London Office. Salary scale £475-£25-£750. The £475 minimum is linked to entry age at 25, with the addition of £25 for each year above that, going up to £600 and subtraction of £25 for each year below 25. Commercial salary fixed according to qualifications, experience, and age. Extra duty allowance of 10 per cent. of annual salary also payable. There is a non-contributory Office Gratuity Scheme providing superannuation benefits.

Qualifications
If candidates have not qualified as members of either the Institution of Civil Engineers or the Royal Institution of Chartered Surveyors, they must have passed the qualifying examination of either of these Institutions, held exempting degree or have obtained the Testamur of the Institution of Municipal Engineers.

They must have served in the civil engineering department of (1) a railway or (2) a municipal authority or other public body or (3) a contractor; have had experience in the office in the preparation of schemes for civil engineering works, and preferably in the field also. Special knowledge is required of (a) railway permanent way including the preparation of schemes for station yards (some knowledge of mechanical signalling would be an advantage), or (b) water supply and drainage schemes with experience of the use of civil engineering contractor's plant, or (c) the purchase of building materials and building equipment including water and drainage installations and fittings. For (c) a candidate with the general experience gained as a quantity surveyor would be considered.

(a) Preparation of schemes and contract drawing for civil engineering works, including railway station yards and marshalling sidings, specifications for the purchase of railway permanent way with all accessories.

(b) Examination of civil engineering projects, including water supply and drainage works. Preparation of specifications for materials and equipment and contractor's plant, adjudicating on tenders for their supply; conducting correspondence of a technical nature with Colonial Governments and contractors and approving schemes and drawings.

(c) Similar to (b) but more particularly concerned with the purchase of building materials and builders' fittings; preparation of specifications and examination of tenders.

Candidates with special knowledge (a) are required in the Design Branch and those with (b) and (c) in the Supply Branch, but Officers with qualifications suitable for both branches may be transferred from one branch to another. Candidates for (a) and (b) may be required to undertake short tours in the Colonies on field or survey work (special allowances are payable) and opportunities may occur for secondment to Colonial Government Engineering Departments for a limited period.

Write stating age and full particulars of qualifications and experience, indicating which of the posts (a), (b) or (c) are considered the most suitable to: Box 4021, c/o WHITES LIMITED, 72, Fleet Street, London, E.C.4, quoting 0/154. (Applications must NOT be made to the Crown Agents direct.)

Crown Agents for the Colonies

APPICATIONS from qualified candidates are invited for the following post:—**ASSISTANT TRAFFIC SUPERINTENDENT** required by the Railway Department of the Federation of Malaya for one tour of three years, with prospects of permanent appointment. Starting salary £510 a month, rising to £770 a month including extra pay. Cost-of-living allowance, for single man £150 a month, for married man up to £310 a month. Free passages. Liberal leave on full salary. Candidates between 25 and 35 years of age must have had a thorough training and considerable experience of Traffic Operating and Commercial Work on a Railway, with a sound knowledge of Railway Rules and Regulations and of the principles of Station Accounting. Apply at once by letter, stating age, whether married or single, and full particulars to this paper, to the CROWN AGENTS FOR THE COLONIES, 4, Millbank, London, S.W.1, quoting M/N/22175/3E on both letter and envelope.

DRAUGHTSMAN, with knowledge of Rolling Stock, required for firm in North Midlands.—Reply to Box 261, c/o *The Railway Gazette*, 33, Totthill Street, London, S.W.1.

THE RAILWAY SYSTEM OF JAMAICA. A general description of the system and its traffic, with an account of economic problems; the motive power used, and some features of operation. By H. R. Fox, B.Sc., M.Inst.C.E., General Manager, Jamaica Government Railway. Reprinted from *The Railway Gazette*, January 5 and 12, 1945. Price 1s. Post free 1s. 2d.

RAILWAY MAINTENANCE PROBLEMS. By H. A. Hull (late District Engineer, L.M.S.R.). Valuable information. With much sound advice upon the upkeep of permanent way. Cloth, 8½ in. by 5½ in. 82 pp. Diagrams. 5s. By post 5s. 3d.

RAILWAY SIGNALLING AND COMMUNICATIONS INSTALLATION AND MAINTENANCE. A practical guide, especially intended to help Signal Inspectors, Installers, Fitters, Linemen, Draughtsmen, and all concerned with installing and maintaining Signal, Telegraph, and Telephone Equipment. 416 pp. Many illustrations. Cloth, 8s. By post 8s. 6d.

FIRST PRINCIPLES OF RAILWAY SIGNALLING. By C. B. Byles. Most treatises on railway signalling are intended for the railway signal engineer, but this is an elementary treatise. Cloth, 7½ in. by 5 in. 146 pp. Illustrated. 4s. By post 4s. 3d.

of the British Transport Commission, who is President of the Association. As Mr. J. G. Bridges, Director General of the Travel Association, was unable to be present, his paper entitled: "Tourism—A Vital Export" was read by Mr. Stewart Townsend, Development Officer, Travel Association, who also replied to a number of questions in the subsequent discussion. The proceedings were concluded by Brigadier-General Sir H. Osborne Mance, who proposed a vote of thanks to the Speaker and to the Chairman.

Aluminium Alloy Cars for London.—The London Transport Executive has placed an order with the Metropolitan-Cammell Carriage & Wagon Co. Ltd. for 90 surface line cars of the latest "R" type to be built with structures fabricated from aluminium alloy sheets and sections. This is the first large order placed in this country for aluminium alloy railway rolling stock. The builders have co-operated with I.C.I. Metals Division in the investigation and development leading to the preparation of the new design.

Senor Machado's Mission.—In an interview with a representative of Reuters in Rio de Janeiro on January 11, Senor Machado said he would be leaving for Lisbon by air on January 12, spending three or four days there and going on to London. He said his main business would be to promote and extend the Anglo-Brazilian agreement of last May, making the best use of Brazil's frozen credits, in conjunction with whole or partial liquida-

tion of Brazilian loans, including the coffee loan. Brazil's dollar loans would not be discussed. He would probably visit Paris after his London discussions. In the field of British-owned public utilities, he would only negotiate terms and conditions for the Leopoldina, Great Western and Ilheos-Bahia Railways, in conjunction with the Brazilian Congress.

Southern Region Paper Salvage.—The Southern Region of British Railways salvaged 803 tons of waste paper last year, thus reaching its target of contributing a thousandth part of the national figure of 800,000 tons, called for by the Board of Trade for 1948. The 803 tons collected was an increase of 26 per cent. over 1947.

Luncheon at Bricklayers Arms.—A luncheon was given recently in the station canteen in honour of 45 members of all grades of the Bricklayers Arms uniform staff who retired at the close of last year. A gift of two guineas to each retiring member was made from the canteen funds. The Agent, Mr. R. H. Petherick, who presided, quoted the combined service total of 1,920 years, with eight members of over 50 years service, and an overall average of 43 years. He thanked them all for their loyal service, and remarked that he was most anxious the family spirit, so characteristic of the Southern Railway, and greatly encouraged by Sir Eric Gore Browne, should be maintained and strengthened, as such spirit augured well for the success of any business concern; he added that it was

most essential that all should pull together to ensure the nationalisation of British Railways becoming and remaining a great success. Mr. H. C. Lang referred to the occasion as unique, and stated that the retiring members had contributed to the success of the Southern Railway.

British Transport Statistics.—The British Transport Commission has published No. 12 of the 1948 series of *Transport Statistics*. The statistics deal with the four-week period to November 28, and it is hoped to include our usual summary of the tables in next week's issue.

Glyn, Mills & Company.—The report of Glyn, Mills & Company for the year ended December 31, 1948, is in a new form in that it is the first time the company has published its profit and loss account, as prescribed by the Companies Act, 1948. This shows a net profit of £155,990 after providing for taxation and making a transfer to reserve for contingencies. The figure is sufficient to cover a 15 per cent. dividend, with a margin of £68,540, of which £50,000 is used to make a further transfer to reserve for contingencies and the balance carried forward. On the liabilities side of the balance sheet, deposits, etc., are up to some £75 million, as compared with about £64 million for the previous year; both figures are due to realised capital from Argentine investments. On the assets side, resulting from increased figures, cash is up from approximately £8·1 million to £10·4 million; money at call from £10 million to £15·7 million; bills discounted from £1·9 million to £2·5 million; and Treasury Deposit Receipts from £9 million to £10 million; investments have slightly increased. Advances, on the other hand, have fallen from £14·5 million to £13·3 million.

Forthcoming Meetings

January 21 (Fri).—Institution of Railway Signal Engineers, at the Institution of Electrical Engineers, Savoy Place, London, W.C.2, at 5.30 for 6 p.m. "Frequency of Signals," by Mr. B. F. Wagenerieder.

January 24 (Mon).—Institute of Public Administration, at Livingstone Hall, Broadway, London, S.W.1, at 6.15 p.m. Organisation of Large Scale Activities: "The Post Office," by Mr. A. Hibbs, Assistant Secretary, the Post Office.

January 24 (Mon).—Institution of Electrical Engineers, Savoy Place, London, W.C.2, at 5.30 p.m. Discussion on: "Generation of Electricity by Gas Turbine Plant."

January 25 (Tue).—Institute of Transport, Metropolitan Graduate & Student Society, at 80, Portland Place, London, W.1. "Some Aspects of Handling Continental Passenger Traffic," by Mr. K. J. Lee.

January 27 (Thur).—British Railways, Southern Region, Lecture & Debating Society: visit to Long-Distance Telephone Exchange, Faraday Building, London, E.C.4.

January 31 (Mon).—Institute of Public Administration, at Livingstone Hall, Broadway, London, S.W.1, at 6.15 p.m. Organisation of Large Scale Activities: "The British Transport Commission," by Mr. Miles Beevor, Chief Secretary & Legal Adviser, British Transport Commission.

Railway Stock Market

With the spotlight on international affairs, British Funds and other sections of markets were less firm, although gilt-edged stocks continued to attract the bulk of investment business in markets. The nationalisation stocks were prominent under the lead of 3 per cent. Transport (1978-88) which moved up to 100½ before easing slightly to 100¼. A factor which tended to switch more attention from industrials to gilt-edged was the statement by Sir Stafford Cripps that he "envisages" the continuance of dividend limitation for another year. The Chancellor also again hinted at the possibility of legislation if the voluntary request were disregarded on any scale. It seems clear, therefore, that he has decided against any important modifications of dividend limitation, although it bears very unfairly on many shareholders and is a factor making it difficult for industrial companies to raise capital on attractive terms. Although the City now takes the view that the Bonus Tax may be abolished or modified, it is felt in general that the next Budget is unlikely to bring any material easing of taxation.

There has been a feeling of caution in the foreign railway market. It is being widely assumed that the question of taking over Leopoldina and Great Western of Brazil railways will figure prominently in the pending London talks. There is general recognition, however, that it might be a long time before actual compensation terms are settled. It is to be hoped that if other British-owned railways are to be acquired there will be no further distinctions drawn by the Brazilian authorities between "recognised" and "unrecognised" capital. Even now there seems no likelihood of any early move to settle compensation for the San Paulo company "unrecognised" capital.

Awaiting events, Leopoldina ordinary have eased to 10½, the preference stock to

37, and the 4 per cent. debentures to 80, while Leopoldina Terminal 5 per cent. debentures were 71. On the other hand buyers were inclined to favour Great Western of Brazil £10 shares which strengthened to 111s. After the further payment in respect of arrears, Antofagasta preference firmed up to 58, but the ordinary stock, after rising to 10, receded to 9½ on profit-taking.

Manila Railway "A" debentures were 85 with the preference shares at 8s. 9d. United of Havana 1906 debentures have been dull at 12½. In other directions San Paulo ordinary showed steadiness at 1611. Nitrate Rail shares were around 71s. 3d.

Beira Railway bearer shares eased to 46s. and were less active. Canadian Pacifics receded to 22½, the tendency being to await the outcome of the claim for higher freights. La Guaira Caracas 5 per cent. debentures have marked 67 and Vera Cruz Terminal 4½ per cent. debentures 39½. Latest developments drew rather more attention to Mexican rails. Mexican Railway 6 per cent. debentures rose to 87, but declines of a point ruled among National of Mexico issues, the 4½ per cents. (1957) being \$17½.

Iron and steels remained quiet. Guest Keens easing to 49s., and Hadfields to 30s. 9d. The colliery section was a good deal less active on the view that market estimates of break-up values and compensation payments have to be regarded mainly as guess-work at this stage. Elsewhere a sharp jump in Settle-Speakman to 70s. was attributed to the possibility of a return of capital arising from compensation for the company's railway wagons. Shares of locomotive building and engineering companies have moved slightly lower. Vulcans were 26s. 10½d., Beyer Peacock 23s. 9d., North British Locomotive 24s., and Gloucester Wagon 62s. 6d. Charles Roberts changed hands at slightly over £7.

Traffic Table of Overseas and Foreign Railways

Railways	Miles open	Week ended	Traffics for week		Total 1948/9	Aggregate traffics to date
			Total this year	inc. or dec. compared with 1947/48		
Antofagasta...	811	9.1.49	£61,400	+ 8,630	1 123,540	£30,240
Bolivar ...	174	July, 1948	£28,960	- 86,357	30 847,127	— \$301,893
Brazil ...	—	—	—	—	—	—
Cent. Uruguay ...	970	6.11.48	32,712	+ 2,978	18 595,105	— 7,652
Costa Rica ...	281	Nov., 1948	35,992	+ 1,696	22 179,839	+ 17,492
Dorada ...	70	Nov., 1948	32,667	+ 8,367	48 305,908	+ 19,292
G.W. of Brazil ...	1,040	8.1.49	37,200	- 4,200	1 39,600	+ 16,600
Int. Ctl. Amer. ...	794	Nov., 1948	\$1,094,493	+ 844,021	48 812,165,251	+ \$211,814
La Guaira ...	224	Dec., 1948	\$15,163	+ 25,985	52 81,273,516	+ \$19,091
Leopoldina ...	1,920	8.1.49	50,284	- 9,911	1 54,948	+ 12,362
Midland Uruguay ...	319	Sept., 1948	19,608	+ 3,123	12 67,355	+ 16,721
Nitrate ...	382	31.12.48	18,274	+ 7,843	52 318,348	+ 89,730
N.W. of Uruguay ...	113	Sept., 1948	5,686	- 1,23	12 16,335	+ 1,969
Paraguay Cent. ...	274	7.1.49	£93,588	+ £23,632	27 £2,798,884	+ £1,080,933
Peru Corp. ...	1,059	Dec., 1948	205,440	+ 21,029	26 1,160,130	+ 134,011
Salvador ...	100	Oct., 1948	c82,000	+ c1,400	18 c329,000	+ c13,400
San Paulo ...	1534	—	—	—	—	—
Talca ...	156	Dec., 1948	8,900	+ 510	26 47,420	+ 6,680
United of Havana ...	1,301	8.1.49	\$196,299	+ 846,981	27 \$5,814,995	+ \$2,116,208
Uruguay Northern ...	73	Sept., 1948	1,072	+ 52	12 3,308	+ 111
Canada						
Canadian National ...	23,473	Aug., 1948	10,110,000	+ 855,250	35 77,676,250	+ 5,854,000
Canadian Pacific ...	17,037	Nov., 1948	8,533,000	+ 1,724,250	48 81,043,000	+ 8,547,750
Various						
Barsi Light*	202	31.12.48	25,875	+ 277	39 246,667	+ 20,355
Beira ...	204	Oct., 1948	£12,338	+ 10,322	4 126,338	+ 10,322
Egyptian Delta ...	607	30.11.48	28,572	+ 12,732	35 484,504	+ 104,346
Gold Coast ...	536	Nov., 1948	246,162	+ 84,582	35 1,648,016	+ 459,522
Manila ...	277	Nov., 1948	30,031	+ 10,295	22 143,744	+ 35,685
Mid. of W. Australia ...	1,900	Oct., 1948	517,794	+ 108,107	29 3,143,917	+ 638,481
Nigeria ...	2,445	Sept., 1947	643,980	+ 102,833	52 6,787,603	+ 612,938
Rhodesia ...	13,347	25.12.48	1,395,448	+ 234,879	39 51,085,278	+ 3,215,733
South Africa ...	4,774	June, 1948	1,358,791	+ 248,144	52 —	—

* Receipts are calculated @ Is. 6d. to the rupee